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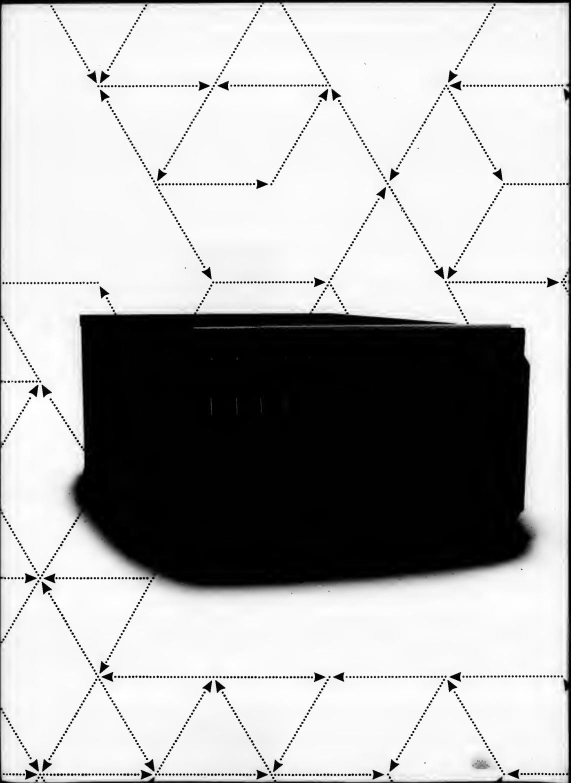

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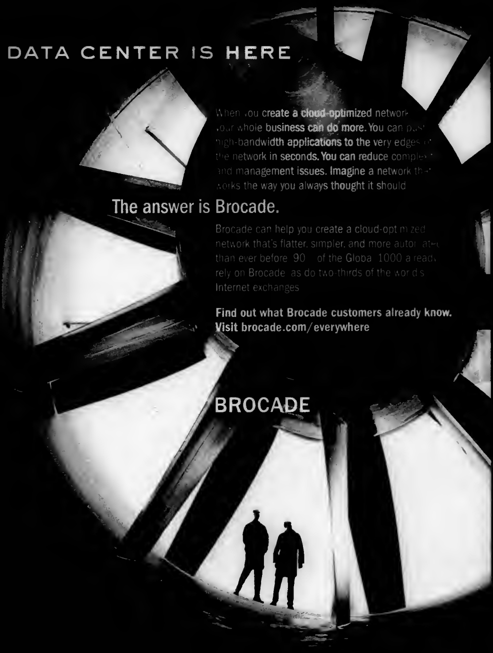
BRIAN STAUFFER ILLUSTRATION



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Data Security via Desktop Virtualization

By centralizing virtual desktops and data, companies can protect sensitive information while giving users more flexibility and choice.

What are the main security "pressure points" corporate and government organizations face today?

The top three are the consumerization of IT, cloud computing and a wildly evolved threat landscape. Consumers today are bringing their own devices into the workforce, selecting their own applications and making other decisions that IT departments used to make. Consumerization changes fundamental security assumptions and really shakes the foundation that IT security has been built upon. As for cloud computing, the fearmongers who state that the cloud is the end of security are wrong. The cloud can give us a needed restart to do security right—taking into account how people are using today's computing technologies while protecting sensitive data and privacy. Finally, on the threat landscape, we're seeing that current attempts at data exfiltration are highly successful. The old security model that protects primarily against malicious access attempts is woefully inadequate to mitigate vulnerabilities once access has been granted.

What is desktop virtualization, and how can it increase IT security?

With desktop virtualization, you can take a familiar desktop PC or laptop environment, virtualize all its applications and the desktop interface itself and run everything on server-based virtual machines in the data center or in the cloud. Users can then access their virtualized desktops with various client devices, including PCs, tablets and smartphones. Every user can be strongly authenticated into the virtualized desktop environment. All data that goes back and forth between the client devices and any virtualized desktops or applications is natively encrypted. Along with that, everything—including transactions and access—is completely logged.

One of the primary advantages of desktop virtualization is its ability to keep sensitive data in the data center. Data owners can ensure consistency, backup, disaster recovery, availability and the ability to make endpoint storage of sensitive data irrelevant. This eliminates a common point of loss and the need for breach notification if somebody loses their device. Moreover, offline and local compute usage models are available that enable both seamless access to public data and strong protection of sensitive data.

How can the deployment of desktop virtualization simplify and enhance the job of security professionals?

With distributed computing, IT had no idea of what sensitive data was on somebody's laptop, so it had to manage every laptop as if it had sensitive data. With virtualization in place, security measures and policies ensure that data access and distribution are appropriate to risk. Security managers can define policies that are very granular to make sure everything is encrypted and continually monitored. Data leakage protection (DLP) and other advanced security measures can be enabled for a particularly sensitive application simply through integration of DLP into the data center—without the need to install a data leakage client on everybody's personal device. By centralizing the data, the desktops and the applications, IT can focus on watching the vault, as opposed to having to watch for all sensitive resources on all the computers that could potentially access it.

How can the deployment of desktop virtualization benefit employees and other consumers of corporate data and applications?

Desktop virtualization removes the need for all consumers to be their own IT manager and their own security officer. By automating data protection and freeing users from mundane and time-consuming data management responsibilities, desktop virtualization makes for greater productivity and happier users. It gives them more freedom of choice to use multiple devices and also enables "workshifting," the ability to work anywhere, from any device and in any situation. Securely.

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HeadsUp

Dharmendra Modha, project leader at IBM Research, says IBM and its research partners have developed chips with "digital neurons."

FUTURE WATCH

Experimental Chips Mimic Brain Power

IBM HAS CREATED prototype chips that could mimic brain-like functions — a development that the company called an "unprecedented" step toward creating intelligent computers that collect, process and understand data quickly.

The prototype chips will help computers make decisions by collating and analyzing immense amounts of data, similar to the way humans understand a series of events, said Dharmendra Modha, project leader at IBM Research. The experimental chips, which contain "digital neurons," use silicon circuitry and advanced algorithms to mimic the brain's structure and operation. They consume very little power.

The chips were developed as part of a multiyear cognitive computing research project called Systems of Neuromorphic Adaptive Plastic Scalable Electronics, or Synapse.

Like the brain, IBM's prototype chips can dynamically rewire to sense, understand and act on information from sensors, as well as discover patterns based on probabilities and associations, Modha said.

Future applications include managing water supplies via real-time data analysis and generating tsunami warnings based on sensor data, he said.

IBM and its research partners have already used the prototypes to simulate activities such as walking through a maze, playing a game of Pong and recognizing patterns in data. The researchers are working toward making them capable of more complex tasks, such as recognizing images in videos.

– Agam Shah, IDG News Service

MESSAGING

Survey: Instant Messaging Will Surpass Email

Many CIOs predict that real-time communication technologies, such as instant messaging, SharePoint, Chatter and Yammer, will overtake classic email in the workplace in the next five years.

That's the conclusion of a Robert Half Technology survey of more than 1,400 CIOs at U.S. companies with more than 100 employees. The survey was released last month.

More than half (54%) of the CIOs polled said real-time workplace communication tools will surpass traditional email in popularity within five years. The prediction was a bit lukewarm, however: 13% of the respondents said real-time messages will be "much more popular" than email, while 41% said they'll be "somewhat more popular."

Robert Half Technology, an IT staffing firm, said a transition to real-time tools could yield workplace benefits, potentially making it easier to work as a team, solve problems, share ideas and manage documents.

"Employers are looking for the right people to deploy these tools in new ways to increase efficiency," said John Reed, executive director of Robert Half Technology, in a statement. "IT professionals should consider the importance of keeping current with real-time technologies in order to stay competitive in the job market."

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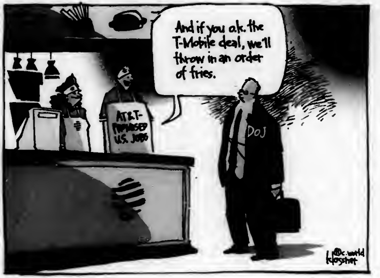
BETWEEN THE LINES
By John Klossner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MOBILE SECURITY

Hackers Find Smartphones Easy Targets

THE BEST way to protect business information on smartphones from cybercriminals is to leave that information off smartphones, a mobile security expert said last month.

Mobile security is still evolving, and smartphones are vulnerable to hackers and social engineering schemes, said Andrew Hoog, chief investigative officer at viaForensics, a security vendor.

Cybercriminals are starting to target smartphones, Hoog said at a cybersecurity summit in Washington hosted by the Computing Technology Industry Association. And because a smartphone combines personal information and corporate data, he said, "it becomes a much richer target."

ViaForensics recently reviewed 100 popular mobile applications and found that 83% of those apps either warranted a security warning from the company or failed the company's basic security tests because they stored sensitive data insecurely, he said.

The security failures included storing data and passwords in unencrypted form. "We're recovering enormous amounts of data on these devices," Hoog said.

Part of the problem is that employees are bringing in a wide variety of mobile devices to use in business settings and IT departments no longer have control over the technology, added Brian Contos, director of global security and risk management at McAfee.

In addition, mobile app and OS developers want to make their products extremely easy to use, said Allan Friedman, research director at the Center for Technology Innovation at the Brookings Institution. Criminals using spyware and other schemes count on split-second decisions by smartphone users, he said.

"The challenge for security is that, [in order] to have someone make a good decision, you need to force cognition — you need to actually make them think," Friedman said. "This is the opposite of usability."

– Grant Gross, IDG News Service

Micro Burst

According to a study of 1,471 big IT projects,

15%

turned out to be money pits, with cost overruns averaging 200%.

RESEARCH RECAP

Oversupply Triggers Drop In RAM Prices

The price of DDR3 memory chips used in laptops, desktops and servers will drop over the next two months as memory companies try to clear out excess inventory in a slowing PC market, IT research firm IHS iSuppli reported on Aug. 29.

The average selling price of DDR3 RAM with a 2-gigabit density will reach $1.60 later in the third quarter, down from $2.10 today, said iSuppli in a research note. The price of DDR3 DRAM was about $4.70 in the third quarter a year ago.

The price could plummet further, to $1.25 in the fourth quarter, said Mike Howard, an analyst at iSuppli.

A shortfall in PC demand has softened DDR3 memory pricing this year, and PC makers are unwilling to add more memory to computers as they try to increase profitability in the low-margin market, Howard said. Some memory makers will move excess inventory into the market rapidly, which could lead to further price drops.

The DRAM market fell apart during the economic downturn at the end of 2008, resulting in today's oversupply, according to Howard. "It's a double whammy," he said. "PC growth has slowed down and users aren't demanding more memory."

– AGAM SHAH, IDG NEWS SERVICE

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MillerCoors Turns to Tech to Retain Workers

Aiming to stem losses of female employees, the brewer uses social networking tools to offer mentoring programs for saleswomen in far-flung locales. By Sharon Gaudin

MILLERCOORS has turned to social networking tools in an effort to stem an exodus of female salespeople. Executives at the country's second-largest beer brewer wanted to make far-flung female sales reps feel less isolated and more a part of a cohesive team.

Samantha Morris, a MillerCoors associate industrial organization psychologist, said the brewer realized about a year ago that women in sales positions were leaving the company at a much faster rate than their male counterparts.

Working alone was an issue for some, while others were having trouble with schedules that often required them to make sales calls at bars at night or on weekends.

The problem was discovered as MillerCoors launched an effort to attract more women.

"We realize that demographically we're at a disadvantage," Morris said. "We have 24% women overall. For most of the best companies — the top 100 companies — the average is about 48% women. We want the different thinking styles and abilities that women can bring to the table."

Chicago-based MillerCoors employs about 8,500 people.

The company last fall expanded its use of Open Mentoring social networking tools from Denver-based Triple Creek to improve communication between employees in far-flung locales and office-based managers.

Jim Ebert, a leadership development manager at MillerCoors, noted that the company had already successfully used the Triple Creek technology for one-on-one mentoring in other departments.

Last October, the company launched a group mentoring program called Women of Sales, in which 45 female sales representatives were split into three groups of 15. Each group had two mentors, either female executives or others in leadership roles.

"I wouldn't say it's the equivalent [of working alongside other people], but it gets the job done," Morris said. "The women are having an opportunity to connect with other people in the business who have similar roles, similar concerns, similar aspirations."

Morris and Ebert said the benefits of the program haven't yet been fully calculated, though early returns show a 1.85% decrease in turnover from the six-month period prior to the program's kick-off to the six-month period after the program ended.

Both said they've received positive feedback and noted that most of the 45 women in the pilot program have remained connected.

Ezra Gottheil, an analyst at Technology Business Research, said social networks can cut a company's costs and make isolated employees feel like a part of the team. "If the workers are isolated, social platforms can be very effective in building group cohesion," Gottheil said.

If the program does help retain workers, he added, MillerCoors could save on recruiting and training costs as well.

Ebert said the successful sales program prompted MillerCoors to launch similar mentoring initiatives in other departments. ◆

The women are having an opportunity to connect [illegible]

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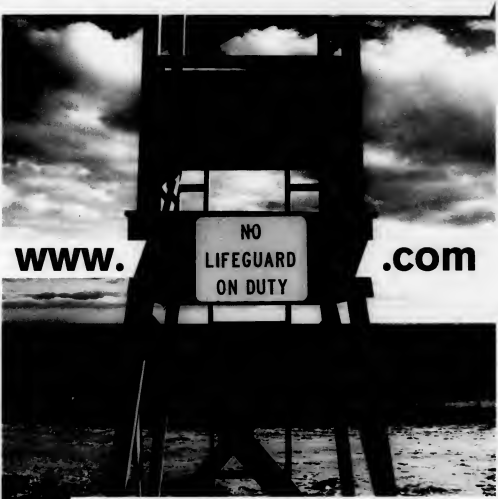

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IT Moving to SSD For Robust Apps

Companies use solid-state storage to boost the performance of high-transaction databases, enterprise apps and virtualized systems. By Lucas Mearian

DESPITE ITS HIGH PRICE TAG, solid-state storage technology is increasingly becoming a viable option for large and midsize companies looking to ease bottlenecks caused by high-transaction databases, virtualized systems and other I/O-intensive applications.

Tucson Electric Power, for example, used Performance Acceleration Module flash cards from NetApp to significantly boost the performance of its PeopleSoft and Oracle customer care and billing reporting systems, said Tony Edlebrock, senior systems administrator at the Arizona utility.

Edlebrock credits the flash technology with cutting the length of nightly Oracle and PeopleSoft batch processes in half, from eight to 12 hours to four to six hours.

In addition to using flash cards on the front end of all of its PeopleSoft and Oracle tools, the utility is also using the technology as front-end cache for most of its 500 VMware virtual machines as well as its GIS mapping systems and the databases used to manage power outages.

Chris Rima, supervisor of IT infrastructure systems at Tucson Electric, a subsidiary of UniSource Energy, suggested that, because SSD cards are so expensive, IT managers should use them for multiple purposes, not just a single task. He said Tucson Electric paid $30,000 for each of its six 40TB-60TB NAND flash cards.

Rima added that the company is now in the process of deciding whether to purchase SSD storage arrays from Nimbus Systems some time next year.

Online auctioneer eBay rolled out a dozen of the Nimbus arrays earlier this year and experienced a 50% reduction in standard storage rack space, a 78% drop in power consumption and a fivefold boost in I/O performance compared with its previous network-attached storage and storage area network systems.

The speed boost allows eBay to bring a new virtual machine online in five minutes, compared with 45 minutes previously, according to Michael Craft, eBay's manager of quality assurance systems administration.

As NAND prices fall over the next few years, analysts are expecting more IT executives to turn to SSD technology. IDC predicts the enterprise-class SSD market will grow to about $1.8 billion in 2012, up from $850 million in 2010.

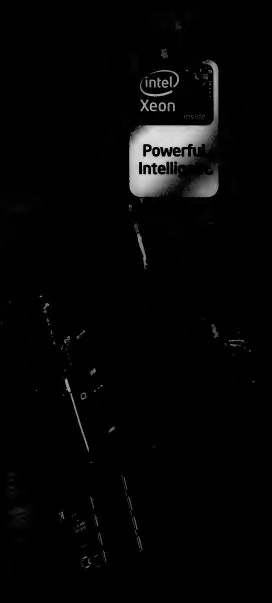
SSDs use nonvolatile NAND flash memory chips, which are cheaper than DRAM chips but still as much as 18 times more expensive than 15,000-rpm Fibre Channel or serial SCSI drives, according to Gregory Wong, an analyst at market research firm Forward Insights.

Wong expects prices to continue falling as the use of solid-state and NAND flash card technology in popular consumer devices increases. Wong predicted a dramatic jump in consumer use of devices featuring the technology by the end of next year, at which time, he added, SSD pricing will drop to the magic $1 per gigabyte level. That price should significantly boost corporate use as well, he said.

Quarles & Brady, a Chicago-based law firm, has been gradually adding SSD cards to its EqualLogic arrays over the past two and a half years, first for its transactional databases and then to support its virtualization technology. The SSD cards significantly boosted performance in both instances, according to Rich Raether, manager of network engineering at the firm.

Raether said he's very impressed with the technology — if not its price tag. "If costs were cheaper," he said, "I'd put everything on SSD drives." ◆

FOTOLIA / SCANRAIL



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What are your career highlights? Former chairman of the Audrain County Emergency Services Board, which manages the county's joint communications and 9-1-1 services, and adjunct faculty member at Columbia College in Missouri.

What's the most promising technology on the horizon? Speech recognition.

What do you do in your spare time? Golfing and gardening.

What's the best piece of advice you've ever received? Your best career choice is to not always follow the money.

What's the best piece of advice you ever gave? Don't put your hands in the dog's mouth. Never assume you know it all.

BRENDA SCHMITZ

SOON AFTER *Clifford Gronauer took the CIO post at the Missouri State Highway Patrol in 2001, he realized the agency needed a major technology overhaul to better support the 10,000 workers using its various applications. So he and his team decided to replace all five of the organization's major systems, which are used for computer-aided dispatch, mobile client needs, records management, the statewide message switch and managing criminal history information. Replacing the systems one by one would have been a monumental undertaking, but Gronauer took the project a step further and decided to replace them all at once. His leadership in guiding his department through that undertaking earned him a nod as a finalist for the Award for Innovation Leadership at the 2011 MIT Sloan CIO Symposium.*

Why did you replace all five systems simultaneously? We actually had planned to do more of a sequential implementation, but along about the time we were about to issue

Continued on page 20

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> **We came to the conclusion that if we organized [the project] and managed it well,** we thought we could pull it off.

Continued from page 18

our RFPs, there was a federal grant program announced through the Department of Justice. We had about two weeks to write up a grant proposal and submit it, and about a month later we got word we were approved. We got a $6 million federal grant. Now the kicker on these is that they come with a time frame attached, so we kind of huddled and asked, "Can we do this?" We came to the conclusion that if we organized it and managed it well, we thought we could pull it off.

Did the funding cover all five? No, not even close, but it was more than just seed funding. It was a substantial amount of money. We actually hired a consulting firm to come in and help us do the RFP process, and their initial guesstimate based on previous projects was that just one of these modules would cost us $15 million. It turned out not to be the case, and we take some of the credit for that because we developed our RFP in a very different fashion than most and we hit the market when it was kind of at a soft point, so it kept the cost on the project lower than it had been historically.

What was the total cost? About $12 million.

What made your RFP process economically beneficial? We threw a couple things in there that made it different. Rather than asking for the sun, the moon and stars, we wanted the basic off-the-shelf software cost, and if and when we determined we needed any kind of customization, we would handle those requests separately at a later date. We found that a lot of agencies that did these projects laid out their requirements and the vendors bid the project all at one time. By eliminating all of that up front, we got a very economical cost factor from all of the vendors. Then we've been very selective in the upgrades or customizations that we required. And in several of those instances, we were able to convince the vendors that if you build this for us, it would be a very useful enhancement for the rest of your customers, so we were able to get some of our customizations done at no additional charge. The other thing we did was we built the RFPs under the initial assumption that the state would be the primary user but that, if possible, we'd like to be able to offer this as a service to other [law enforcement agencies in the state]. Vendors saw it as an opportunity and gave us a deal up front.

What were the biggest rewards in upgrading all five at once? The biggest rewards were making the road officers more efficient. It really made a tremendous reduction in the amount of clerical work that the officers had to do.

What was the biggest challenge? Procurement. Most of my career has been in the private sector, and purchasing is very different in a government setting. It's filled with red tape and other challenges. I can see why they're there, but it really delays and makes things more difficult.

Is there something in that process that others can learn from? The biggest challenge we were up against was being very careful about a couple of words: *must* and *shall*. You have to be very careful about how those get applied, because those two words imply *require*. So something that might have been a very desirable feature or component, if you put *must* and *shall* [and] someone cannot offer that, they automatically become disqualified. We actually had folks going through the RFPs to highlight those words, and then we went through them one at a time and asked, "Is that really what we want?" because once you disqualify a vendor, that's it, they're out of the picture.

What were the keys to leading your IT staff through such an undertaking? There were some folks who were really supportive and excited about doing something new, different, better. And you had some who were very fearful, asking "What am I going to do now?" So we had to go through that assurance program with those folks to let them know we'd provide whatever training to get them up to speed, that we were going to make that investment because the biggest hurdle on these things is the business knowledge. I can take someone who knows all about the criminal justice system and how the data flows and train them on the new technology and I'm way ahead of the curve than with someone who knows the technology but has no clue on how police work goes.

— Interview by Computerworld *contributing writer* **Mary K. Pratt** *(marykpratt@verizon.net)*

PRESTON GRALLA

Microsoft Finally Gets It: Windows Is Not the Future

> Windows is still a cash cow, but it is not a high-growth business. It's the past, not the future.

WHEN YOU THINK MICROSOFT, you think Windows. Once upon a time, that was a good thing. In recent years, though, this overreliance on Windows has been holding back the company, inhibiting its ability to break into high-growth markets. But there are signs that Microsoft finally recognizes that its future lies not in Windows, but elsewhere.

CEO Steve Ballmer has repeatedly said that Microsoft's future is bound up with Windows. At the Microsoft Worldwide Partner Conference in July, he was crystal clear about that, saying in his opening speech, "Windows is the backbone product of Microsoft. Windows PCs, Windows Phones, Windows slates. Windows, Windows, Windows, Windows, Windows."

Windows has certainly been good to Microsoft, and it's still a cash cow that will be milked well into the foreseeable future, and likely beyond. But it is not a high-growth business. It's the past, not the future. The real growth is elsewhere — in smartphones, for example. And there, the use of the Windows brand hurts the company. Gartner found that Windows Phone 7 suffers from the "your dad uses it" syndrome: For younger people, the perception that their parents use a Microsoft phone at work makes them less likely to buy it.

Relying on Windows as its tablet operating system holds back Microsoft as well, because it has to wait for the release of Windows 8 for serious tablets to be built. By that time, Google's Android and Apple's iOS will have the market sewn up.

If any more evidence is needed that Windows is Microsoft's past, look at its most recent quarterly earnings. Microsoft had a breakout period, even though Windows sales fell 1% — the second quarter in a row they dropped. A very bright spot was revenue from Xbox 360 and Kinect, sales of which jumped 30% over the previous quarter.

Despite Ballmer's bluster about Windows, Microsoft clearly recognizes that it has to get serious about high-growth areas and not focus just on Windows. Last month, Frank X. Shaw, a Microsoft corporate communications executive, blogged about Microsoft's vision of TV and entertainment. In a post titled "The Future of the Living Room," he wrote, "Integration of products and services like Xbox, Kinect and Bing is at the heart of our strategy." He describes a world in which you use Kinect, Xbox and Bing to interact with your TV and entertainment devices using gestures and your voice. Windows isn't mentioned even once in the post or an accompanying video.

More recently, Microsoft launched an all-out blitz to get customers to sign up for its premier cloud-based service, Microsoft Dynamics CRM Online, offering $150 per seat to switch from competitors Oracle, Salesforce.com and SAP. That works out to a tidy $75,000 for a company buying 500 seats. Microsoft recognizes the importance of the cloud: In a blog post announcing that plan, it cited a Forrester Research prediction that the global cloud market will rise from $40.7 billion in 2011 to more than $241 billion in 2020.

Does all this mean that Microsoft is abandoning Windows? Certainly not. There are billions of dollars to be made from the operating system, and Microsoft isn't about to walk away from that. But Microsoft finally seems to be slowly recognizing that keeping Windows as the heart and soul of the company is a mistake. It may finally be breaking out of the Windows-everywhere mindset, and that's a good thing for anyone who cares about the future of the company. ◆

Preston Gralla is a *Computerworld.com* contributing editor and the author of more than 35 books, including *How the Internet Works* (Que, 2006).

The Art & Science of Fashion

SPOTLIGHT   BUSINESS INTELLIGENCE

The combination of predictive analytics and social media is helping retailers anticipate the whims of fashion *— and pick next season's winners.*

BY ROBERT L. MITCHELL

ELIE TAHARI, the upscale women's fashion brand and retail chain, has a pretty good idea which of its styles customers will want.

There's no wizardry, no crystal ball. The retailer relies on the science of predictive analytics, using technologies from IBM to forecast demand for its line, which it sells through Nordstrom and other high-end retail stores. The tools pull data from a continuously updated data warehouse to forecast what needs to ship to each store every week, right down to the styles, colors and sizes each location will need to meet demand.

BRIAN STAUFFER ILLUSTRATION

> **Maybe tie-dye is going to be huge or pink will be big.** *Those are decisions that the merchant has always made, but that can be assisted with sophisticated algorithms that point out patterns that [they] may have missed.*
>
> **CATHY HOTKA,** PRINCIPAL, CATHY HOTKA & ASSOCIATES

"That protects the customer, ensuring that any style or color they order is in stock, but also protects us so we don't overproduce," says Nihad Aytaman, director of business applications at Elie Tahari.

Analytics have made an indelible mark on the retail fashion business over the past decade, helping with everything from predicting the best pricing and markdown strategies to forecasting the right mix of products, colors and sizes for every location. There's one critical area, though, that Elie Tahari and many other retailers and designers still don't use predictive analytics for: choosing which new styles will be next season's winners.

But thanks to new technologies, that could be changing.

"Maybe tie-dye is going to be huge or pink will be big. Those are decisions that the merchant has always made, but that can be assisted with sophisticated algorithms that point out patterns that [they] may have missed," says Cathy Hotka, principal of retail consulting firm Cathy Hotka & Associates.

Predictive analytic tools, which rely on historical data to make future demand projections for any given product, can play a role even in predicting the whims of fashion. But right now, the hottest area for picking fashion winners lies at the intersection of analytics and social media.

While predictive analytics can help identify fashion winners, most merchandisers aren't using the technology for that purpose, for two reasons: Unlike products that are carryovers or that will simply be revised for the next season, new fashions don't have the historical sales data that predictive analytic tools need to work their magic, and retail buyers are wary of allowing science to intrude on the art of picking fashion winners. "For us right now, key styles are picked by merchants in their discussions with designers, who present products that are inspired by trends and what's happening in the world," says Louise Callagy, a spokesperson for Gap Inc. But Gap expects analytics to play a bigger role in the future. "Although it's in the early stages, we apply analytics from our early online sales globally and in certain markets to help gauge a better read of what we predict will sell in stores," she says.

High-stakes Game

"Computer-aided fashion projections are something everyone is talking about," says David Wolfe, creative director at The Doneger Group, which predicts fashion trends the old-fashioned way: using seasoned experience and insight. But it's a high-stakes decision for merchandisers and fashion designers — and one that can be tricky to get right. Fashion retailers stake their fortunes on the experience, intuition and gut instincts of an elite cadre of buyers. For smaller retailers, the effect of a buyer who loses his mojo can be devastating to the bottom line.

"Apparel is a very fickle business. If you miss one season, you can go under," says Aytaman. Most buyers simply don't trust technology to do the job. So they turn to consultants like The Doneger Group for predictions as to what colors and styles will be in — and what will be out. Those insights, in turn, are based on experience, intuition and regular visits to designers and fashion shows.

Adding to the pressure is the fact that the consumer market has fragmented and shoppers are less willing to embrace styles dictated from the runway or by designers and retailers. Just 19% of consumers listen to manufacturers or retailers these days, according to an IBM survey. Consumers today tend to make their own decisions about fashion, in conjunction with their peers. More than ever, the industry needs to listen to the customer.

The Elements of Style

The problem with using predictive analytics to forecast fashion trends, says Aytaman, is that the accuracy of those predictions varies in direct proportion to the amount of historical data that can be fed into the model. So while Elie Tahari uses analytics to determine, for example, demand for its business-suit line, which doesn't change much from year to year, it doesn't use the technology to pick more seasonal, fashion-oriented items, such as dresses and sportswear. "We can't accumulate enough history to really do something like this," he says.

While it's true that a new design may have no historical analog on which to model success, merchandisers can break down the key attributes that describe a given fashion — everything from color to collar size — and perform a regression analysis on those. In other words, merchandisers can perform a statistical analysis on all of the variables that describe the new style, assuming historical data is available, to project whether the item will be hot or not.

"Using attributes and supplementing that with what you see as fashion trends, again as attributes, is pretty cutting edge," says Saurabh Gupta, director of retail solutions at IBM. And while there may not be enough historical data to create models for every attribute, he says some fashion elements do have predictable cycles. "A color stays popular for a year at least, and you can derive insight from that," Gupta says.

And retailers can enhance models with knowledge, such as the fact that certain types of fabrics are becoming less attractive to buyers.

Wolfe: Computer-aided predictions are the talk of the fashion world.

Mobile Business

Pre-Show Planner

CTIA Enterprise & Applications

[illegible] **CTIA**–The Wireless Association

How smart business is moving.

Pre-Conference Seminars **October 10, 2011**

Conference & Exposition **October 11–13, 2011**

San Diego Convention Center, San Diego, CA

CTIA
The Wireless Association

CTIA Schedule At-a-Glance

CTIA events in BOLD. Schedule subject to change.

PRE-CONFERENCE
Monday, October 10

- **Registration**
- **Media Center & Media Registration**
- **CTIA Certification Meetings**

- Enterprise Mobility Boot Camp (EMF)
- Device Wars: An Ovum Seminar

DAY ONE
Tuesday, October 11

- **Registration**
- **Media Center & Media Registration**
- **CTIA VIP Club**
- **Keynote Session**
- **Exhibit Floor Open**
- **CTIA Power Series**
  - **Boardroom Session: Apps**
  - **Speed Sessions**
  - **Boardroom Session: Enterprise & Verticals**
  - **CTIA/FCBA Policy Track**

- DroidPlanet (SV Android Group)
- Mobile Augmented Reality (NextVision Media)
- Mobile Platform Challenge (Cloudmob.org)
- Mobile Cloud Means Business (Yankee Group)
- Using Data.gov to Power Mobile Applications (Efiia & MobileGov)
- A.T. Kearney Executive Luncheon
- Open Mobile Solutions Presents: Developer Pitch and Round Tables

DAY TWO
Wednesday, October 12

- **Registration**
- **Media Center & Media Registration**
- **CTIA VIP Club**
- **Keynote Session**
- **Exhibit Floor Open**
- **Industry Expert Guided Floor Tours (led by Ovum)**
  - **Devices Tour**
  - **LTE Tour**
  - **Show Highlights & Overview Tour**
- **CTIA Power Series**
  - **Boardroom Session: mCommerce**
  - **Disruptathon: Enterprise Apps**
  - **Boardroom Session: Content, Monetization & Advertising**
  - **CTIA/FCBA Policy Track**
- **CTIA 2011 Hot for the Holidays Awards Ceremony**

- DroidPlanet (SV Android Group)
- LTE: Services & Speeds Unleashed (Award Solutions)
- M2M's Integral Role in Enterprise Efficiency
- The Latest Developments in Applications for the Mobile Enterprise (eWeek)
- Smartphones, Tablets & the New Enterprise (Brighthand & TechTarget)
- Which M-Wallet? (MEF)
- WIPJam — Day for Developers (WIP)
- Mobile Platform Challenge (Cloudmob.org)
- World Health Care Congress presents:
  How to Win Business from the Major Purchasers of Health Care Services
- Storytelling through Advanced Mobile Content (PGA)
- Wireless GameChanger Award (MobiTech Fest)

D HREE
urs tober 13

- **Registration**
- **Media Center & Media Registration**
- **CTIA VIP Club**
- **Keynote Session**
- **Exhibit Floor Open**

		Super Pass	VIP Pass	Conference Pass	Exhibits Pass	Partner Events Pass
8:00 AM – 5:00 PM	**Hall F Lobby**					
8:00 AM – 5:00 PM	**Ballroom 20 B-C**					
8:00 AM – 5:00 PM	**Omni Hotal**					
12:00 PM – 6:00 PM	Room 29 B-C	●	◉	●	◉	●
1:00 PM – 5:00 PM	Room 29 A	●	◉	●	◉	●
8:00 AM – 5:00 PM	**Hall F Lobby**					
8:00 AM – 6:00 PM	**Ballroom 20 B-C**					
8:00 AM – 5:00 PM	**Hall F**	●	◉			
9:30 AM – 11:00 AM	**Hall E**	●	◉	●	◉	●
11:00 AM – 5:00 PM	**Exhibit Floor**	●	◉	●	◉	●
11:00 AM – 5:00 PM						
11:00 AM – 1:00 PM	**Ballrooom 20 A**	●	◉	●		
1:00 PM – 3:00 PM	**Room 23**	●	◉	●	◉	●
2:30 PM – 4:00 PM	**Ballroom 20 A**	●	◉	●		
11:00 AM – 5:00 PM	**Room 29 D**	●	◉	●	◉	●
10:30 AM – 5:00 PM	Room 29 A	●	◉	●	◉	●
11:00 AM – 5:30 PM	Room 29 B-C	●				●
11:00 AM – 5:00 PM	Exhibit Innovations Stage, Booth 145	●	◉	●	◉	●
11:00 AM – 5:00 PM	Room 28 C	●	◉	●	◉	●
11:00 AM – 12:30 PM	Room 28 B	●	◉	●	◉	●
12:30 PM – 2:30 PM	Room 28 E	*By Invitation Only*				
3:00 PM – 6:00 PM	Room 28 B	●	◉	●	◉	●
8:00 AM – 5:00 PM	**Hall F Lobby**					
8:00 AM – 6:00 PM	**Ballroom 20 B-C**					
8:00 AM – 5:00 PM	**Hall F**	●	◉			
9:30 AM – 11:00 AM	**Hall E**	●	◉	●	◉	●
11:00 AM – 5:00 PM	**Hall F**	●	◉	●	◉	●
1:00 PM – 5:00 PM	**Exhibit Floor**	*Tour Ticket Required*				
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1:00 PM – 4:00 PM	**Room 23**	●	◉	●	◉	●
2:30 PM – 4:00 PM	**Ballroom 20 A**	●	◉	●		
10:30 AM – 5:00 PM	**Room 29 D**	●	◉	●	◉	●
2:00 PM – 3:00 PM	**Exhibit Innovations Stage, Booth 145**	●	◉	●	◉	●
10:30 AM – 5:00 PM	Room 29 A	●	◉	●	◉	●
10:30 AM – 5:00 PM	Room 28 C					●
10:30 AM – 2:00 PM	Room 29 B-C	●	◉	●	◉	●
11:00 AM – 1:00 PM	Room 28 B	●	◉	●	◉	●
11:00 AM – 2:00 PM	Room 28 E	●	◉	●	◉	●
11:00 AM – 12:00 PM	Exhibit Innovations Stage, Booth 145	●	◉	●	◉	●
11:00 AM – 7:00 PM	Room 28 D	*By Invitation Only*				
12:00 PM – 1:30 PM	Exhibit Innovations Stage, Booth 145	●	◉	●	◉	●
2:00 PM – 5:00 PM	Room 28 B	●	◉	●	◉	●
3:00 PM – 6:00 PM	Room 28 E	●	◉	●	◉	●
3:00 PM – 4:00 PM	Exhibit Innovations Stage, Booth 145	●	◉	●	◉	●
8:30 AM – 3:00 PM	**Hall F Lobby**					
8:30 AM – 3:00 PM	**Ballroom 20 B-C**					
8:30 AM – 3:00 PM	**Hall F**	●	◉			
9:30 AM – 11:00 AM	**Hall E**	●	◉	●	◉	●
11:00 AM – 3:00 PM	**Exhibit Floor**	●	◉	●	◉	●

Registration Packages:

- **S Super Pass**
- **V VIP Pass**
- **C Conference Pass**
- **E Exhibits Pass**
- **P Partner Events Pass**

Please see Page 37 for Registration Packages Details

Welcome

The power of wireless is truly transformational, and an evolution is underway that will forever change the way we do business—through wireless.

With a focus on applications, content, network architecture and technologies, CTIA ENTERPRISE & APPLICATIONS™ brings a community of users, new wireless entrants, carriers, developers and manufacturers together to generate dialogue, share ideas and do business. Launched in 1995, this CTIA event continues its tradition of educating attendees on the business of mobile.

We're looking forward to seeing you in San Diego this October, where you'll join a community of more than 15,000 attendees.

The trade show floor will highlight emerging market segments, introduce new industry players and support one-stop-shopping for mobile business products and services. CTIA's all new Power Series educational program and stellar partner event lineup will examine key mobile business practices, and our keynoters, which include leaders in wireless and disruptive technologies, will share real-life strategies and war stories from the front lines of the mobile business revolution.

CTIA ENTERPRISE & APPLICATIONS™ 2011 will give you first-hand access to a thriving, efficient, competitive marketplace—the wireless industry. I invite you to explore the possibilities of your mobile business.

Robert Mesirow
Vice President and Show Director
CTIA–The Wireless Association

A sampling of industry leaders you will see...

ATKEARNEY
OPEN Calling all business owners.
Rethink Possible
DISCOVER
ERICSSON
InformationWeek
Interop TECHNOLOGIES
KORE
LG Life's Good
M2M
NOVATEL WIRELESS
OpenMarket.
PCD Bringing you the wireless world.
SAMSUNG mobile
Sprint
SYBASE | 365 MOBILE SERVICES
verizon wireless
Wilson
WIRELESS DEALER EXPO
Wireless WEEK

The CTIA Keynotes

Tuesday–Thursday, October 11–13, 9:30 AM – 11:00 AM
Hall E

Get a front row seat for invigorating keynotes that will ignite your imagination! Join CTIA for ground-breaking announcements and insightful discussions from the keynote stage.

Stay tuned for additional keynote speaker announcements at www.ctiashows.com/keynotes!

Dan Hesse
Chief Executive Officer
Sprint Nextel Corporation
2011 CTIA Chairman

Ralph de la Vega
President & CEO
AT&T Mobility and Consumer Markets

Don Butler
Vice President
Cadillac

Dan Mead
President & CEO
Verizon Wireless

Dan Schulman
Group President, Enterprise Growth
American Express Company

Andy Miller
President & CEO
Polycom

KEYNOTE HOST
Steve Largent
President & CEO
CTIA–The Wireless Association

S V

CTIA VIP Club

SPONSORED BY MOGREET.

Tuesday–Thursday, October 11–13
Hall F

CTIA VIP Club

The CTIA SUPER PASS
– Your Best Value!

As a **CTIA Super Pass** or **CTIA VIP Pass** registrant you will receive access to the CTIA Power Series, the Exhibit Floor, all Keynote Sessions, complimentary partner events, and exclusive access to the CTIA VIP Club. Make better use of your time and take a dent out of your travel expense report with the CTIA VIP Club—the perfect satellite office while on the road:

- Enjoy continental breakfast, lunch and light refreshments throughout the day.
- Host small meetings within club.
- Rest in a spacious, comfortable lounge.
- Reserve private meeting rooms within the VIP Club available on a daily first-come, first-served basis.*
- Take advantage of business equipment and free Wi-Fi access.

** Each day, Super Pass and VIP Pass registrants have the option of reserving private meeting rooms throughout the day within the VIP Club Reservations are taken on a first-come, first served basis in 60 minute intervals with no more than 2 consecutive hours scheduled per company each day. These private meeting room will be available until all time slots have been reserved*

Meeting Room 5

CTIA 2011 Hot For The Holidays Awards Program

Tuesday–Thursday, October 11–13
Exhibit Innovations Stage, Booth 145

CTIA 2011 HOT FOR THE HOLIDAYS

Created in 2009, the CTIA Hot for the Holidays Awards Program identifies and celebrates the hottest mobile consumer electronics products and applications for the holiday season. Winners are celebrated as the "must-buy gifts" for people of all ages this 2011 holiday season!

Submissions were received in the following categories:

Fashionista
Accessories, luxury mobile products, brand name and high-end devices.

Fitness Buff
Fitness apps, devices, accessories.

Gadget Guru
The latest, most innovative mobile consumer electronics (CE) devices on the market.

Gamer & Entertainment Enthusiast
Gaming and entertainment apps, services, devices and accessories

Globetrotter
Location-based services, travel entertainment apps, ticketing solutions, embedded GPS devices, booking and reservation services.

Health & Wellness Nut
Apps and devices that help to monitor health, encourage wellness and enhance patient care.

Music Lover
Music phones, apps, bluetooth and other accessories.

Road Warrior
Tablets/pads, smartphones, netbooks, Bluetooth accessories/headsets, productivity apps.

Shutter Bug
Camera phones, accessories, photo sharing apps.

Social Butterfly
Apps and devices that make staying socially "networked" easily.

Entries are reviewed by a panel of recognized members of the media, industry analysts and executives, industry colleagues and show attendees. Products are judged on innovation, functionality, technological importance, implementation and overall "WOW!" factor.

Come see what the hottest gifts of the 2011 holiday season will be at the Hot for the Holidays Awards Ceremony, Wednesday, October 12, at 2:00 PM on the Exhibit Innovations Stage, Booth 145!

Go to **www.ctiashows.com/holidays** *for more information and to sign up for the Hot for the Holidays announcement list.*

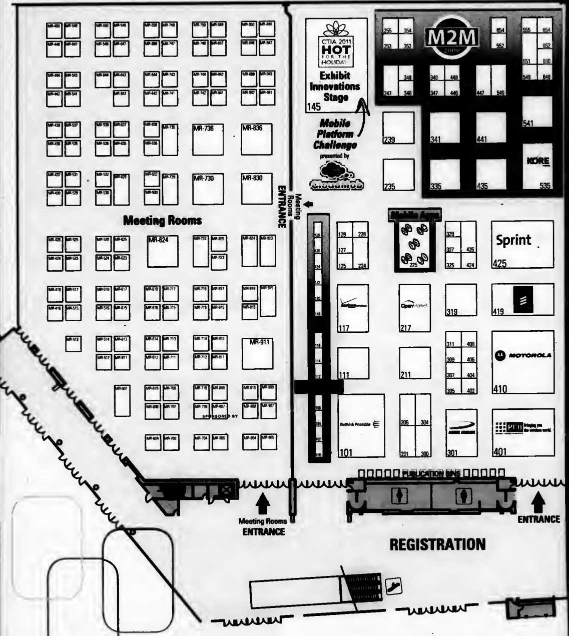
Wireless GameChanger Award™

MOBITECH FEST at CTIA Enterprise & Applications

MobiTechFest in partnership with CTIA ENTERPRISE & APPLICATIONS℠ 2011 is seeking Wireless GameChangers™! Start-ups that are working on the most innovative and disruptive technology, applications and services in the mobile and wireless industry must apply! Eligible applicant companies can be based anywhere on the globe, yet must be in early stage, seeking funding and are finalists at the annual MobiTechFest events.

For more information and to apply, please visit: **www.ctiashows.com/mobitechfest**

The Exhibit Floor



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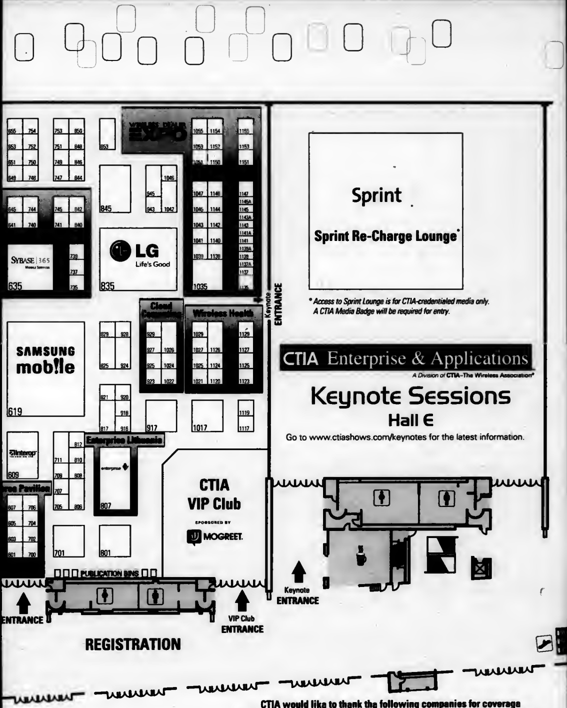

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Sprint Re-Charge Lounge*
* Access to Sprint Lounge is for CTIA-credentialed media only. A CTIA Media Badge will be required for entry.
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Wireless Health
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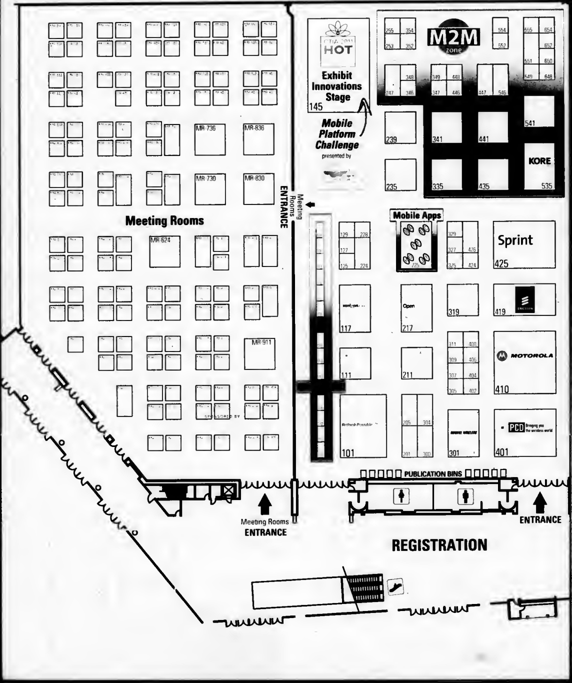
The Exhibit Floor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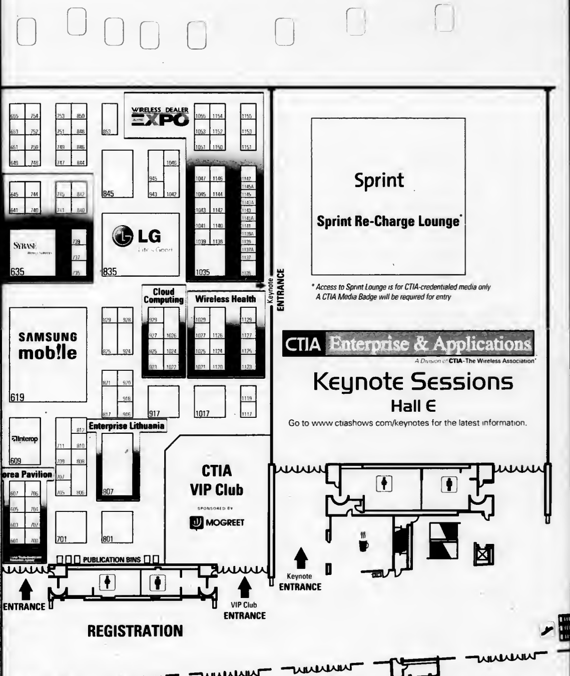

WIRELESS DEALER EXPO
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Exhibitors *as of August 11*

3Cinteractive	MR-823
7 Layers	446
Advantech	817
Agmis	807
AirWatch	319
Alta SeÒal Wireless	1138
American Express Open	211
American Roamer	928
Amzer	1047
AT&T	551
AT&T	101, MR-816, MR-915
AuthenTec, Inc.	201
Avanquest Software	MR-724
BelAir Networks	1026
Bolt	923
Business Wire	918
Carr & Ferrell LLP	228
Cellphone Mate	1119
CETECOM, Inc.	549
CHARGE Anywhere	741
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ETRONIKA	807
Fashion Electronics	1146
Franklin Wireless	216
FreightWatch Security Net	650
Full Circle Wireless	106
Glider Glove	1137A
GreatCall, Inc	812
Green Swan Inc.	1128
Hold-Free Networks	114
Huawei	1017
Hypercel Corp.	1137
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iGenApps	100
IMS- Intelligent Mechatronic Systems	825
Infinite Peripherals, Inc.	325
Intel	346
Internet Innovation Alliance	120
Interop Technologies	609
iTo	807
King Slide Technology Co., Ltd.	111
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Laird Technologies	648
LG Electronics MobileComm USA, Inc.	835
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Man & Machine, Inc.	735
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Mellmo, Inc	916
Metasite Business Solutions	807
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Mokipay Europe	807
Motricity	601
Multi-Tech Systems, Inc.	541, MR-825
MyWireless.org	1042
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Samsung Telecommunications America	619
ShowUhow	122
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SoftMaster	929
SOTI Inc.	917
Sprint	425
Sybase 365	635
Taoglas Limited	546
Telenor Connexion A8	554
TELESOFTAS	807
Telit Wireless Solutions	435
The Sports Network	225A
TransferTo	641
TSG Global	225C
TwistedPair	920
u-blox America	447
UD7	807
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Valencell Inc.	1027
Verizon Wireless	117, MR-629
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Weather Decision Technologies (iMap)	810
Weather8ug	711
Wilson Electronics	806
Win Information Technology Pvt. Ltd.	125
WordLogic Corporation	225H
Wyless	347

Industry Expert Guided Floor Tours

LED BY OVUM

BACK BY POPULAR DEMAND! TOUR TICKET $75

The CTIA ENTERPRISE & APPLICATIONS™ 2011 attendees have an unique opportunity to participate in a VIP exhibit floor tour led by an expert analyst from Ovum, a consulting, research and business information company that specializes in telecom, IT services and software.

These expert guided tours will provide insight and in-depth knowledge of the companies on the show floor and help attendees gain high-level access to key contacts within these companies.

DATE: Wednesday, October 12

TIMES: 1:00 PM, 2:30 PM & 4:00 PM

GROUP SIZE: Groups are limited to 25 participants

TOUR THEMES & SCHEDULE:

1:00 – 2:00: Devices
2:30 – 3:30: LTE
4:00 – 5:00: Show Highlights & Overview

Pavilions

Cloud Computing Pavilion

CTIA
The Wireless Association®

The Cloud Computing Pavilion will showcase the mobile cloud computing ecosystem—networks, infrastructure, data storage services, data processing, security, applications and devices.

COMPANY	BOOTH
BelAir Networks	1026
Bolt	923
Compuware	927
SoftMaster	929

Enterprise Lithuania Pavilion NEW!

enterprise
Lithuania

For the first time a group of companies from Lithuania will be exhibiting at CTIA ENTERPRISE & APPLICATIONS℠ 2011. The joint national stand initiated by the Enterprise Lithuania will present the wide spectrum of the mobile technology industry: Mobile payments (Mokipay Europe), integrated solutions for e-banking (Etronika), mobile application development (Telesoftas, iTo, UD7), UX research and design, mobile solutions (Idea Code), Mobile social network (Eskimi), mobile, web and system integration solutions for telecommunications (Metasite Business Solutions), custom software solutions (Agmis) as well as the world's largest free app store with over 2 billion downloads to date (GetJar).

Enterprise Lithuania would like to extend an invitation to you to visit the Lithuanian national stand No. 807 (Hall F) and Lithuanian companies. Representatives of Enterprise Lithuania and 10 innovative companies are expecting to meet potential partners and discuss cooperation possibilities and potential business projects.

COMPANY	BOOTH
Agency for Science, Innovation & Technology (MITA)	807
Agmis	807
Enterprise Lithuania	807
Eskimi	807
ETRONIKA	807
Idea Code	807
iTo	807
Metasite Business Solutions	807
Mokipay Europe	807
TELESOFTAS	807
UD7	807

Korea Pavilion NEW!

kotra
Korea Trade-Investment Promotion Agency

Korea Trade-Investment Promotion Agency (KOTRA) will be hosting the KOREA PAVILION. KOTRA will present a wide range of Korean companies within the wireless-mobile industry to showcase their exceptional technology.

The KOREA PAVILION will provide an exciting opportunity to witness the newest products and technologies from Korean in one location.

We would like to extend a warm invitation to everyone attending CTIA ENTERPRISE & APPLICATIONS℠ 2011 to visit the KOREA PAVILION. KOTRA representatives and featured Korean companies are eager to explore new opportunities and collaborations with the potential partners.

For any inquiries about the KOREA PAVILION, please contact Mr. JJ Lee at KOTRA Los Angeles office (323) 954-9500 ext. 138 or visit us at www.kotrala.com

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Launch Pad Pavilion

The Launch Pad Pavilion is a showcase for new and start-up companies that are exhibiting ground-breaking innovations and bleeding-edge developments in a wide range of wireless technologies and solutions such as mobile apps, marketing & advertising, content, green solutions, intelligent transportation and more.

COMPANY	BOOTH
ecoATM	112
Full Circle Wireless	106
Hold Free Networks	114
iGenApps	100
Internet Innovation Alliance	120
Mobile Pundits	128
ShowUhow	122

M2M Zone™

The M2M Zone™ organizes events around the globe where network operators, application designers, hardware manufacturers and end users come together to showcase wireless Machine-to-Machine communications products and services. The next evolution in communications, M2M represents a dynamic global market. M2M solutions employ microchips to communicate location, status and other characteristics across Wide Area Networks. Applications include wireless remote control and monitoring of fixed and mobile devices for enterprise and consumer markets, in addition to sensors and RFID technologies. New services are emerging daily in Energy & Utilities, Manufacturing, Transportation and Medical fields as businesses realize the effect that device connectivity can have on their bottom line.

The M2M Zone produces both an exhibitors' pavilion and a conference on-site at CTIA exhibitions. Visit the M2M Zone pavilion & conference website for the latest innovations in the M2M field.

For more information, visit www.m2mzone.com or contact Rula Salameh at rsalameh@m2mzone.com or (781) 769-9750.

COMPANY	BOOTH
7 Layers	446
AT&T	551
CETECOM, Inc.	549
Cinterion Wireless Modules	341
Deutsche Telekom AG	552
FreightWatch Security Net	650
Intel	346
KORE Telematics	535
Laird Technologies	648
M2M Antennas	448
M2M Zone	652
Multi-Tech Systems, Inc.	541, MR-825
NetComm Limited	349
nPhase	247, MR-632
Numerex	335
ORBCOMM Inc.	555
RACO Industries, Inc.	441
Taoglas Limited	546
Telenor Connexion AB	554
Telit Wireless Solutions	435
u-blox America	447
Wyless	347

mCommerce Pavilion

The mCommerce Pavilion encompasses the growing capabilities of mobile commerce and showcases companies providing the platforms, applications and systems that readily integrate a mobile interface to the existing e-commerce back end. From mobile network operators, retailers, financial institutions, media and entertainment companies interested in the digital transfer of money can easily locate key players in this space.

COMPANY	BOOTH
CHARGE Anywhere	741
Man & Machine, Inc.	735
Sybase 365	635
TransferTo	641

Mobile Apps Pavilion

Showcasing the newest mobile platforms, hottest mobile content, social networking, or application delivery solutions, CTIA has created a place for all companies involved in the mobile end-users experience within the Mobile Apps Pavilion. The mobile applications market is experiencing unprecedented growth and generating access to untapped revenues for handset manufacturers and carriers alike. This pavilion will be your key to staying on top of the latest and greatest in mobile applications.

COMPANY	BOOTH
SOFTHOUSE	225D
The Sports Network	225A
TSG Global	225C
WordLogic Corporation	225H

The Wireless Retail Buyer's Expo

The Pre-holiday BUYING EXPO!

WIRELESS DEALER EXPO

Wireless Dealer Magazine & EXPO brings 5,000+ Independent Wireless Retail Buyers to the EXPO floor for the largest pre-holiday buying event!

Join us at the 4th Annual Wireless Dealer EXPO! Each year retailers continue to triple their profits due to incredible deals buying hot product from the EXPO show floor. Independent wireless retailers across US and Canada are invited to the EXPO to buy the hottest wireless products manufacturers, wholesalers and distributors have to offer this holiday selling season.

Wireless Dealer EXPO is the wireless retail buyer's event of the year by continuing to bring together storeowners and buyers to purchase open inventory from exhibitors at wholesale pricing in time for peak holiday selling. Exhibitors are prepared to take orders and ship inventory immediately! Make plans now to boost your Q4 profits.

Attendees will be able to touch, test, and compare products on the EXPO floor.

COMPANY	BOOTH
Alta Señal Wireless	1138
Amzer	1047
Clear Protector	1139
Eternity Wireless	1145A
Fashion Electronics	1146
Glider Glove	1137A
Hypercel Corp.	1137
Microsigns Inc	1135
Mobile Distribution Partners	1039
Mobile-net US	1035
Telispire	1051

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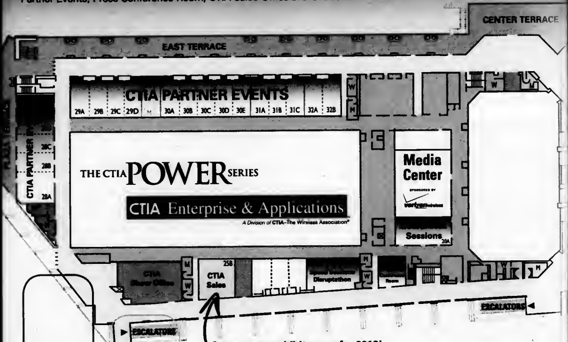
Wireless Health Pavilion

CTIA The Wireless Association®

The Wireless Health Pavilion presents the latest offerings from companies providing products, developing applications and managing networks that empower healthcare providers and enhance communication among healthcare professionals and patients. These innovations include monitoring your health remotely, tracking daily habits, managing health records, inventory tracking and supporting all-around physical wellness.

COMPANY	BOOTH
connectBlue Inc.	1129
Green Swan Inc.	1128
Valencell Inc.	1027

Take the escalators up two levels from the exhibit floor for access to the CTIA POWER Series, Partner Events, Press Conference Room, CTIA Sales Office and CTIA Show Office.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CTIA Enterprise & Applications
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Media Center
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CTIA Show Office
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25B
CTIA Sales
Disruptathon
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Secure your exhibit space for 2012!
Contact the CTIA Sales Team to enhance your show presence at conventionsales@ctia.org

THE POWER SERIES

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Introducing the NEW CTIA Power Series—dramatically changing the format and structure of the CTIA program to elevate the conversation from instructional to strategic.

The CTIA Power Series will focus on delivering high-level, more actionable content, by having speakers from Fortune 500 companies provide insightful perspective on how mobility is enhancing the manner in which they're conducting business. The CTIA Power Series sessions will also feature higher degrees of interactivity among speakers and attendees, and facilitate exclusive networking opportunities to further drive engagement from across the mobile ecosystem to the IT decision-maker.

CTIA has created three tailored discussion formats under The Power Series umbrella:

BOARDROOM SESSIONS

Industry visionaries will provide exclusive access to executive insights on a wide range of topics ranging from leveraging mobile applications to increase operational efficiencies to the mobile marketing opportunities that exist for brands both big and small.

SPEED SESSIONS

Fast-paced presentations discussing bleeding edge concepts emerging in mobility. As part of these sessions, wireless innovators will introduce the ideas that will be at the forefront of emerging technology.

DISRUPTATHON

A panel of eight of the most disruptive enterprise mobile apps are each allowed a five minute pitch and then judged by the audience based on uniqueness, design, model and disruptive positioning.

S T C

BOARDROOM SESSIONS*

Ballroom 20 A

CTIA brings you exclusive access to executive insights on a wide range of topics, providing clarity on the key issues affecting the industry which will help you position your business for success and growth. Each session is followed by a 30 minute networking reception.

Apps Boardroom Session

Day One – Tuesday, October 11
11:00 AM – 12:30 PM

Everyday elements of life, social interactions, shopping, travel and entertainment are increasingly being integrated with the distinct functionalities of wireless technologies. The result: The Mobile Lifestyle. The Apps Boardroom Session will feature insights on how content and applications are being adapted to engage users and leverage the consumer's emerging "mobile identity." Media and content-focused strategies from wireless carriers, content providers, media companies and brands will also be revealed.

MODERATOR:

Spencer Ante, ***The Wall Street Journal*** *(invited)*

SPEAKERS:

David Brinker, *SVP, Operations & Business Development,* **The Daily**
Rob Chandhok, *President,* **Qualcomm Internet Services** and *President,* **Qualcomm Innovation Center, Inc.** and *Senior Vice President,* **QCT**
Brad Duea, *SVP, Value Added Services,* **T-Mobile**
Marco Argenti, *SVP – Developer and Marketplace,* **Nokia**
Xbox – *Executive TBD*

Enterprise & Verticals Boardroom Session

Day One – Tuesday, October 11
2:30 PM – 4:00 PM

Wireless means business. Enterprise deployments of mobile technologies have revolutionized operations in the areas of fleet, field and resource management. This Boardroom Session will focus on real world deployments and case studies highlighting cutting-edge mobile capabilities that CIOs and IT managers can leverage to boost their companies' internal productivity. In addition, this session looks to future wireless solutions designed to enhance the end-user's service levels and experiences.

MODERATOR:

Nick Bilton, ***The New York Times*** *(invited)*

SPEAKERS:

Janet Schijns, *VP, Business Solutions Group,* **Verizon Wireless**
Ericsson – *Executive TBD*
Intel – *Executive TBD*

* Speakers are subject to change, and we're adding new speakers all the time. Visit **www.ctiashows.com/powerseries** for the current roster of A-list speakers.

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mCommerce Boardroom Session

Day Two – Wednesday, October 12
11:00 AM – 12:30 PM

As mobile merges with commerce, the consumer's potential options for payment for both virtual and actual goods via wireless expand. Still, the issues of security, consumer confidence and vendor support remain. The mCommerce Boardroom Session addresses the latest trends in mobile, in-store and social commerce and reveals how innovative merchants leverage the mobile phone as a marketing portal, consumer engagement gateway and payment mechanism.

MODERATOR:

Paul Taylor, ***Financial Times*** *(invited)*

SPEAKERS:

Fared Adib, *VP, Product Development,* **Sprint**

Christy Wyatt, *Corporate VP, Software and Services Product Management,* **Motorola** *(invited)*

Paypal – *Executive TBD*

Content, Monetization & Advertising Boardroom Session

Day Two – Wednesday, October 12
2:30 PM – 4:00 PM

Nearly every report or survey published thus far this year is indicating 2011 as a year of tremendous growth for mobile advertising. As budgets expand to meet marketers' demands for mobile components in their marketing mix, the number of well known brands planning to adopt a variety of distinct interactive mobile platforms during the coming year is swelling with those already using mobile planning to increase their spending. This Boardroom Session will spotlight the unique opportunities and challenges that exist for advertisers and brands both big and small.

MODERATOR:

Jon Fortt, **CNBC** *(invited)*

SPEAKERS:

Maartin Albarda, *Global Marketing Connections Vice President,* **Anheuser-Busch (InBev)** *(invited)*

Rip Gerber, *President and Chief Executive Officer,* **LOC-AID**

Holger Luedorf, *Vice President,* **Mobile & Partnerships, Foursquare** *(invited)*

Scott Puopolo, *Global Vice President,* **Internet Business Solutions Group**

Anita Stewart, *Senior Vice President, Corporate Partnership,* **Sesame Workshop**

AT&T – *Executive TBD*

SPEED SESSIONS

S V C E L

FREE TO ALL REGISTERED ATTENDEES!

Day One – Tuesday, October 11
1:00 PM – 2:30 PM

30 minute networking reception to follow

Room 23

Be in the room as creative entrepreneurs, wireless wunderkinds and technogeeks introduce the ideas you'll be competing with next year through fast-paced presentations of bleeding edge concepts emerging in mobile. Get a lot of great information quickly, in an exciting, compelling, bite-size format! Speed Sessions will feature a series of speakers delivering quick 5-minute sessions on a wide range of fresh, wireless topics in rapid succession. Two moderators ensure a rapid-fire pace and bring a yin-and-yang sensibility that will drive interactive discussion and even debate. Ample networking time is built in to allow you to follow up with your favorites.

DISRUPTATHON

Mobile Enterprise Apps Event @ CTIA

S V C E L

FREE TO ALL REGISTERED ATTENDEES!

Day Two – Wednesday, October 12
12:00 PM – 5:00 PM

Room 23

So who are the game changers in the mobile enterprise? Which are the sleeping giants, and which are the up-and-comers? What will the next great enterprise mobile app innovation look like, and where will it come from? These questions and more will be answered at the Disruptathon: Mobile Enterprise Apps event, where 8 of the top mobile enterprise app companies will square off during the CTIA Power Series. Come interact with the companies disrupting the status quo and promising to change the enterprise for the better. Attendees will use the Disruptathon Innovation Discovery Platform to provide ratings and feedback during each presentation. Winners will be announced at the conclusion of the program—making for an energetic and suspense-filled event!

ENTERPRISE AND DEVELOPERS MAY APPLY TO PRESENT AT DISRUPTATHON:
www.ctiashows.com/disruptathon

FOR MORE INFORMATION, CONTACT:
Disruptathon
703-473-2148
info@disruptathon.com

CTIA/FCBA Policy Track

S V C E L

FREE TO ALL REGISTERED ATTENDEES!

Day One – Tuesday, October 11
11:00 AM – 5:00 PM

Day Two – Wednesday, October 12
10:30 AM – 5:00 PM

Room 29 D

This track will explore the policy issues generated by consumers' increased reliance on innovative mobile wireless products and services, including fourth generation wireless capabilities, mobile healthcare, smart energy, broadband adoption and USF, along with the legislative and regulatory challenges and opportunities policymakers face on the state and federal levels.

Introducing...

CTIA Partner Events

Mobility is at the center of a massive paradigm shift in business—from enhancing patient care in the operating room and advancing smart meter reading, to providing immediate inventory visibility at the point-of-sale. This excitement has led enterprises to embrace wireless technologies, optimizing everyday operations.

Through a comprehensive series of Partner Events, CTIA ENTERPRISE & APPLICATIONS™ showcases the benefits of wireless data in the enterprise and the new opportunities available in the application and content markets.

CTIA strives to provide in-depth education, knowledge and unprecedented access to potential partners and customers that are critical to your business. We are proud to present programs from the following partners in key areas that are impacting your business now:

ATKEARNEY
Award Solutions
Brighthand™ Smartphone News & Reviews
CloudMob

theefiiagroup
emf
eWEEK
M2M

MEF
MOBILEgov
Next[illegible]
OPEN Mobile Solutions
OVUM

PGA
Silicon Valley Android Developers
wip wireless industry partnership
World Congress
yankee group

Mobile Enterprise & Vertical Markets

From new smartphones, tablets, and connected devices to machine-to-machine (M2M) equipment, mobile devices have penetrated enterprise and vertical markets, enabling them to extend the reach of corporate information to outside traditional networks. By incorporating mobile platforms, devices and applications into corporate initiatives, organizations across vertical markets are able to be more competitive, drive greater productivity globally, enhance the customer experience and collaborate more effectively across the distributed workforce.

Further, the growing trend of mobility in the enterprise has created new opportunities across the mobile ecosystem—from capitalizing on the mobile cloud; deploying ROI-driven mobile applications; and establishing corporate vs. employee liable mobility policies to supporting, managing and addressing how the consumerization of IT brought on by BYOD (bring your own devices) can help organizations mobilize their business. Organizations now have the opportunity to create a holistic approach to implementing mobile strategies that extend mobility from business processes to product offerings.

Join us at the following partner events to learn how vertical enterprises – across finance and retail to manufacturing and healthcare – are deploying best practices to mobilize their business.

Monday, October 10

Device Wars: An Ovum Seminar
page 22

Enterprise Mobility Boot Camp
page 21

Tuesday, October 11

A.T. Kearney Executive Luncheon
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Mobile Cloud Means Business
page 23

Using Data.gov to Power Your Mobile Applications
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Wednesday, October 12

The Latest Developments in Applications for the Mobile Enterprise
page 26

LTE: Services and Speeds Unleashed
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M2M's Integral Role in Enterprise Efficiency
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Smartphones, Tablets & the New Enterprise Information Ecosystem
page 26

Which M-Wallet? Carrier, Proximity or Quick-Checkout Wallet?
page 24

World Health Care Congress Presents: ***How to Win Business from the Major Purchasers of Health Care Services***
page 27

Enterprise Mobility Boot Camp

Pre-Conference Day: Monday, October 10
12:00 PM — 6:00 PM
Room 29 B–C

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Enterprise Mobility Strategy & Policy

12:00 PM – 1:00 PM

The more things change, the more they stay the same. Sure, there have been a number of advances in (enterprise) mobility in the last 12 months, but organizations still need to have a sound mobile strategy – predicated on mobility policies – to be able to reap the greatest benefits from their mobility initiatives. Join Philippe Winthrop, Founder and Managing Director of The Enterprise Mobility Foundation, as he shares some of the key ideas your organization needs to consider when defining or refining its mobility strategy.

Mobile Application Strategies

1:00 PM – 1:45 PM

Today's most forward thinking enterprises have moved well beyond simply mobilizing email. Not only are they mobilizing internal business processes to enhance the productivity of their workforce, they are also leveraging mobile applications as a means to better communicate and interact with customers and prospects. This session will provide attendees the opportunity to see how organizations can mobilize key internal and external applications, as well as what technology options may be best suited for them.

Speed Networking

2:00 PM – 2:45 PM

Participate in a fast-moving networking session with other attendees of the Enterprise Mobility Boot Camp. This networking session: where mobile challenges and key lessons are shared and valuable new relationships are formed. Facilitated by Steve Brumer, partner at 151 Ventures, LLC, Wireless Rain founder, CEO and Enterprise Mobility Foundation advisory board member.

Enterprise Mobility Pitch Fest

2:45 PM – 3:45 PM

This is your opportunity to hear from some of the leading and most prominent vendors of enterprise mobility solutions in the marketplace. Each vendor will have the opportunity to win you over as they share their vision of what are the key challenges their customers have faced and how their solutions can help you overcome your mobility challenges and turn them into opportunities.

Understanding Mobile Security and Mobile Risk Management

4:00 PM – 5:00 PM

As enterprise mobility continues to evolve and mature, one of the most important discussion points revolves around enterprise grade security for these mobile devices and applications. Engage in a dialogue to better understand how to overcome the potential risks of deploying mobile solutions within the enterprise landscape and ensure that your organization's data is safe and secure no matter where your employees access that data.

End-User Panel

5:00 PM – 6:00 PM

The Enterprise Mobility Boot Camp finishes in the trenches. Listen to IT and line of business decision makers as they share with you lessons from their real-world mobile deployment experiences. Join us in this closing session – moderated by editors of FierceMobileIT to gain significant insight into the benefits, challenges and ROI associated with implementing a mobile strategy.

SPEAKERS:

Philippe Winthrop, *Managing Director,* **The Enterprise Mobility Foundation**
Bob Egan, *Founder, Managing Director & Chief Analyst,* **The Sepharim Group**
Lynnette Luna, *Editor,* **FierceBroadbandWireless and FierceMobileIT**
Aaron Turner, *President & Founder,* **IntegriCell, LLC**

Device Wars: An Ovum Seminar

S V C G L

FREE TO ALL REGISTERED ATTENDEES!

Pre-Conference Day: Monday, October 10
1:00 PM — 5:00 PM
Room 29 A

OVUM

The mobile device market continues to evolve very rapidly, driven by advances in smartphone technology, increasing adoption of mobile broadband devices and the promise of an explosion of connected devices driven by machine-to-machine communication. Throughout this diverse market, there are players jostling for position and in many cases waging outright war both in the market and in the courts. Join Ovum analysts and guest speakers for this seminar exploring the rapidly-changing mobile devices market.

1:00 PM

Smartphone Winners and Losers

Jan Dawson
Chief Telecoms Analyst

The smartphone market is fiercely competitive. Over the coming years, the smartphone market will increasingly become the mobile device market as penetration rises sharply and feature phones become ever more marginal, with many players competing for a share of revenues and profits. This session will examine these players and their strategies. It will also provide a framework for identifying the winners and losers among them.

2:00 PM

Bring Your Own Device – Who's In Charge Now?

Mike Sapien
Principal Analyst, Enterprise

The continuing explosion of mobile devices and proliferation of smartphones within the industry has put increasing pressure on the IT decision makers and their managed mobility efforts within the enterprise. How does the IT group manage this? How can they say no to C-level executives who just expect support? This session will review some examples and policies that can be used and some considerations that provide some insight into managing the device chaos.

3:00 PM

LTE Devices in the World's Most Competitive Market

Sara Kaufman
Analyst, Operator Strategy

With four operators planning to have LTE services deployed by the end of 2011 the U.S. is the most unique and active 4G market in the world. This presentation will overview the current US LTE device landscape, the strategic device partnerships operators are currently engaged in, and the opportunities and challenges LTE operators face in driving customer adoption and creating economies of scale around LTE devices in the face of direct competition from alternative "4G" technologies with more mature device ecosystems.

4:00 PM

Who Will Make Money from M2M?

PANEL DISCUSSION, CHAIRED BY OVUM ANALYSTS

There is now broad agreement that the number of connected devices will explode in the coming years as wireless connectivity is built into many items that have never previously been connected to networks. However, it is not yet clear who will make money from all this activity, or how. A panel featuring participants from carriers and equipment vendors, and chaired by Ovum analysts, will discuss the evolving business models for M2M and attempt to provide some clarity around these questions.

Mobile Cloud Means Business

Day One: Tuesday, October 11
11:00 AM – 5:00 PM
Room 28 C

S V C E P

FREE TO ALL REGISTERED ATTENDEES!

yankee group

Yankee Group believes enterprise IT must embrace change—especially the power of mobile cloud—or risk becoming obsolete. Consumerization of the enterprise is a reality. Business executives and workers are using personally owned tablets, smartphones and applications in the cloud to be more productive on the go. New approaches such as corporate mobile app stores and partnerships with service providers and app vendors can help enterprise IT balance the freedom of the mobile cloud with protecting the security and integrity of the company.

Benefits of attending:

- Hear expert insight and advice from top thought leaders in the cloud space
- Receive a complimentary Yankee Group research report on mobile cloud computing in the enterprise
- Network with high-level industry analysts as well as enterprise IT leaders, service providers and cloud vendors

Seating is limited to just 100—register today!

SPEAKERS:

Eugene Signorini
Vice President
Yankee Group

George Hamilton
Principal Analyst
Yankee Group

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A.T. Kearney Executive Luncheon

Day One: Tuesday, October 11
12:30 PM – 2:30 PM
Room 28 E

ATKEARNEY

FREE TO ALL REGISTERED ATTENDEES WITH INVITE ONLY!

A.T. Kearney will host an exclusive and intimate Reception and Executive Luncheon, where senior executives will have an opportunity to hear from Tom Koulopoulos, one of the industry's most well-respected thought leaders on Innovation. Widely recognized as an authority on the implications of information technology on global organizations, his articles and market insights appear frequently in national and international print and broadcast media such as *BusinessWeek*, the *Wall Street Journal*, *Forbes*, *The Economist*, CNBC, CNN and NPR.

Following lunch and the keynote presentation, the audience will have an opportunity to participate in a Q&A session with Tom.

This event is by invitation only and there is no cost to attend. If you are interested in attending, please check the appropriate box during the registration process and a representative from A.T. Kearney will contact you shortly.

A.T. Kearney is a global management consulting firm that uses strategic insight, tailored solutions and a collaborative working style to help clients achieve sustainable results. Since 1926, we have been trusted advisors on CEO-agenda issues to the world's leading corporations across all major industries. A.T. Kearney's offices are located in major business centers in 38 countries.

Which M-Wallet? Carrier, Proximity or Quick-Checkout Wallet?

S V C e L

FREE TO ALL REGISTERED ATTENDEES!

Day Two: Wednesday, October 12
11:00 AM – 12:00 PM
CTIA Exhibit Innovations Stage, Booth 145

MEF

MEF, the global trade body for the mobile media industry, will bring together a panel of experts to explore the ramps and roadblocks to the various commerce types.

MEF's M-commerce initiative has focused on bringing brands, financial institutions, content owners/producers, carriers and retailers together to create transparency and increase consumer confidence in mobile transactions.

This expert panel will delve into the complex privacy, security and transactional issues surrounding M-commerce while also providing practical advice to help brands, financial institutes, content owners and operators best utilize old and new payment forms.

The panel will include speakers from the M-commerce value chain and will include leading brands, retailers and payment enables.

LTE: Services and Speeds Unleashed presented by Award Solutions

Day Two: Wednesday, October 12
10:30 AM – 5:00 PM
Room 28 C

OFFICIAL TECHNICAL TRAINING SPONSOR

As the Official Technical Training Sponsor of CTIA ENTERPRISE & APPLICATIONS™ 2011, Award Solutions invites those in sales-related roles to attend this unique training event. Join Russ Edwards, Senior Consultant and Technology for Business lead at Award Solutions, as he presents LTE from a technical sales perspective.

LTE promises much faster data speeds and access to services that are not practical in 3G. As enterprise customers explore the capabilities and implications of LTE, those involved in enterprise sales need to be prepared to confidently and accurately answer their questions. This session provides the necessary background to answer more involved questions about the LTE technology and how it applies to enterprise customers, including questions about devices and SIM cards, LTE sessions, connecting to enterprise networks, QoS, VoLTE, and interoperability with other technologies including EV-DO and UMTS/HSPA.

http://www.awardsolutions.com/CTIA.pdf

Registration Fee: $1,095

PLEASE NOTE: There is a separate registration fee for the LTE: Services and Speeds Unleashed event. It is NOT INCLUDED with the SUPER PASS. Your LTE: Services and Speeds Unleashed event pass also includes access to CTIA Keynotes, CTIA Speed Sessions (The CTIA Power Series), Disruptathon (The CTIA Power Series), the CTIA Exhibit Hall, and Free Partner Events.

Smartphones, Tablets and the New Enterprise Information Ecosystem

S V C G L

FREE TO ALL REGISTERED ATTENDEES!

Day Two: Wednesday, October 12
11:00 AM – 2:00 PM
Room 28 E

Brighthand
Smartphone News & Reviews

TechnologyGuide and Brighthand will present two panel sessions at CTIA ENTERPRISE & APPLICATIONS™ 2011, both focusing on the challenges and opportunities related to the use of smartphones and tablet PCs in small businesses and the enterprise.

Panel Discussion 1:

Smartphones and Tablets in the Enterprise: Productivity Opportunities and Challenges

The first panel discussion will look at some of the obvious benefits of both smartphones and tablets as business tools as well as discuss potential roadblocks in terms of security, management and abuse.

Panel Discussion 2:

What's Hot and What's Not in Smartphone and Tablet PC Applications

The second panel session will zero in on some of the top timesavers in mobile apps, and pinpoint some of the real time wasters. Panelists will also discuss what makes the grade in terms of mobile app development and utility.

Both panels will be moderated by TechnologyGuide Editorial Director **Tim Scannell**. Panelists include Brighthand Editor **Ed Hardy**, TabletPCReview Editor **Jamison Cush**, and representatives from both the user and vendor community. Editors will also present inside information on some of the latest technology in the industry, and talk about what may be coming in terms of cutting edge designs and functions.

The Latest Developments in Applications for Mobile Enterprise presented by eWEEK

S V C G L

FREE TO ALL REGISTERED ATTENDEES!

Day Two: Wednesday, October 12
11:00 AM – 1:00 PM
Room 28 B

WEEK

Location awareness, near-field communications, social network check-ins, and immediate payment systems are all becoming part of the enterprise application development model. In this seminar, eWEEK editor Eric Lundquist, Ziff Davis Enterprise Research Director Guy Currier and other key analysts and customers will examine the latest trends in mobile enterprise application development. Attendees will gain a fuller understanding of how to design, develop and deploy mobile applications that will give their company a business advantage, including a preview of exclusive research into the mobile application market.

SPEAKERS:

Eric Lundquist, *Senior Vice President, Editorial,* **Ziff Davis Enterprise**
Guy Currier, *Research Director,* **Ziff Davis Enterprise**

World Health Care Congress Presents: How to Win Business from the Major Purchasers of Health Care Services

FREE TO ALL REGISTERED ATTENDEES!

Day Two: Wednesday, October 12
2:00 PM – 5:00 PM
Room 28 B

The World Health Care Congress Leadership Summit on How to Win Business from the Major Purchasers of Health Care Services will convene health care providers, health plans, employers and government executives with wireless, mHealth and technology companies leaders to discuss how to win business from the major purchasers of health care services in the United States.

A wide range of established and start up mHealth companies have technology solutions that the providers of health care services could utilize to improve the delivery, health and wellness of consumers that would lead to improved outcomes and lower costs. 2011 World Health Care Congress Leadership Summit on Wireless Health will feature key thought leaders from health plans, health systems and employers who will share their initiatives in an interactive panel discussions format.

2:00 PM – 3:00 PM

Payer Perspective on Mobility as Disruptive Innovation – The Challenge of Technology-Enabled Health Care

How the shift towards consumer-driven mobility is creating the next-generation computing platform, insights into decision-making amidst accelerated change and shortened horizons and realizing the vision of personalized health care.

CONFIRMED

Martha L. Wofford, *Head of Consumer Platform*, **AETNA**

3:00 PM – 4:00 PM

Employer Perspective on a Consumer Focused Approach to Lifelong Well-Being – Mobile Apps, Remote Monitoring, Social Networking and Games for Health

Explore how to drive change and improvement in health care costs, effectiveness and quality outcomes with member mobile services – web, text messaging and smartphone apps and hear the future trends to support consumers in reaching their wellness goals.

CONFIRMED

Delia Vetter, *Senior Director, Benefits*, **EMC Corporation**
Ilene Klein, *MD, Director, Employee Health Services*, **Qualcomm**

4:00 PM – 5:00 PM

Planning for Enterprise-Wide Deployment of mHealth Apps, Mobile Devices and Wireless Networking

Evaluate alternatives for rolling out smartphone, tablet and other mobile technologies without sacrificing privacy, security or access.

CONFIRMED

Sandra Elliot, *Director of Consumer Technology and Service Development*, **Meridian Health**

M2M's Integral Role in Enterprise Efficiency

Day Two: Wednesday, October 12
10:30 AM – 2:00 PM
Room 29 BC

S V C E P

FREE TO ALL REGISTERED ATTENDEES!

ORGANIZED BY M2M

PLATINUM SPONSOR nPHASE ADVANCED M2M

SESSION SPONSORS Rethink Possible intel Telit wireless solutions

Our experts will provide a look into the innovations they have developed, as well as what the future holds. Sessions will include developer case studies as well as a workshop providing instructional lessons or methods for achieving device certification. Topics will include:

M2M & ERP Backbones – What Are the Systems Integration Hurdles?

Data from remote devices is becoming increasingly important for enterprises, both from an operational and strategic viewpoint. In the early days of M2M, such data was typically used mainly by those directly involved in the operations related to it. Now it is needed throughout the enterprise and that means close integration with ERP backbones. How is this best achieved? What are the alternatives? What are the key issues that need to be resolved?

2G vs 3G – Are Enterprise Data Requirements Shifting?

At the present time, the vast majority of remote data requirements for enterprises use 2G networks. Yet mobile phone requirements are moving rapidly to 3G and beyond. To what extent are M2M enterprise applications shifting towards 3G? How quickly is this shift likely to happen, if at all? Is there a benefit in moving to 3G ahead of real need? Is there a total Cost of Ownership issue?

Asset Tracking – How Important Are Global Solutions?

Evidence suggests that M2M adopters are increasingly looking for international coverage for their asset tracking solutions. That while the mobile phone business essentially has a national focus, M2M essentially has an international focus – particularly when it comes to asset tracking applications. Is this true? How is this likely to change over the next 3 to 5 years? What are the implications of global versus national solutions?

APPS, SOFTWARE & CONTENT

Mobility has permeated both enterprise and consumer lifestyle markets, through the growing adoption of mobile smartphones and tablets, coupled with advancements in 4G network technologies, innovative content delivery tools and overall interest in application usage. These trends have contributed to the global expansion in the mobile applications, software and content markets, where researchers expect the mobile application market to reach $25 billion by 2015 from about $6.8 billion in 2010. This market dynamic has led mobile vendors across the wireless ecosystem to look for opportunities to monetize media and content-focused applications and software to meet consumers' emerging "mobile identities," from investing in new business models, responding to user behavior, meeting regulatory requirements, and discovering the impact of mobility on society. Capitalizing on these robust opportunities has opened new doors for how apps are conceptualized, the integration of innovative engagement features like social networking and location-based services and leveraging the cloud for in-app purchasing models.

Participate at the following partner events to learn and engage with leaders addressing this key segment of the wireless ecosystem.

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Tuesday, October 11

DroidPlanet

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Mobile Platform Challenge

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Using Data.gov to Power Your Mobile Applications

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Mobile Augmented Reality for Smartphones and Tablets

Day One: Tuesday, October 11
11:00 AM – 5:30 PM
Room 29 B-C

mobileAR

Mobile Augmented Reality for Smartphones and Tablets is a full day event dedicated to the business of AR. Top experts will discuss the design, development and deployment of AR applications.

Forrester Research says about AR; "it will be a disruptive technology that changes the way consumers interact with their environments. It will bridge the real and digital worlds, enabling new ways to engage customers via advanced digital interactivity". Juniper Research predicts over 50,000 mobile AR apps will be available by 2015.

Topics covered will include:

- The development, deployment and marketing of mobile AR apps for smartphones and tablets
- Separating the hype from reality
- What are the current and future uses of AR?
- Latest supporting technologies
- Technical challenges
- Monetization of mobile AR
- Protocols and standards
- Brand case studies
- Social networking and social media and AR
- Mobile AR and the enterprise
- Advertising and marketing strategies

Confirmed Speakers:

- Daniel Egan, **Microsoft**
- Gene Becker, **Layar**
- Jay Wright, **Qualcomm**
- Vivian Rosenthal, **GoldRun**
- Brian Setzer, **Ogmento**
- Brian Mullins, **Daqri**
- Brian Wassom, **Honigman**

More announced soon!

Who should attend?

Developers, Operators, Brands, Agencies, Publishers, Technology Providers, Gaming Companies, Start-ups, Enterprise, Handset, Tablets and Device Manufacturers, Internet and Search Companies, Content Providers

Augmented Sustainability

Augmented Sustainability Developer Awards!

The first annual Augmented Reality Awards on Sustainability will recognize mobile apps that have a positive impact on the environment by effectively harnessing the power of Augmented Reality. The app challenge is supported by industry leaders and environmental champions. It is co-organized by Appsgeyser. Developers who would like to participate, please visit www.mobilearevent.com.

To see the latest speakers and view the agenda, please visit www.mobilearevent.com.
Interested in speaking or sponsoring? Please contact us at info@mobilearevent.com or call 727-388-9849.

Registration Fee: $295 ($199 for Developers – Contact us for discount code.)

SUPPORTING MEDIA: FierceWireless FierceDeveloper FierceMobileContent imtech humanity+ TNW THE NEXT WEB vr-news Augmented Views

Please note: Mobile Augmented Reality is a partner hosted event that requires the Partner Event Pass or the Super Pass. This event it is NOT included in the other CTIA Registration Packages. The Partner Event Pass and the Super Pass also INCLUDE admission to the exhibit floor, all CTIA keynote sessions and free partner events. Please see www.ctiashows.com/reg for details.

Mobile Platform Challenge

Day One: Tuesday, October 11, 11:00 AM – 5:00 PM
Day Two: Wednesday, October 12, 12:00 PM – 1:30 PM
CTIA Exhibit Innovations Stage, Booth 145

FREE TO ALL REGISTERED ATTENDEES!

Join us for this new CTIA event where top mobile app developers will showcase their latest apps and face-off against each other in the Mobile Platform Challenge! Not only will you get to see firsthand these new apps in action but you will also determine their fate with your votes. Multiple platforms will be represented—Android, Blackberry OS, iOS, and Windows Mobile. This event will begin with 5 minute Lightning Talks from our sponsors followed by an Unpanel where your questions will be answered. The fast paced speed geeking event will follow. Be prepared to be wowed and have a blast!

DAY ONE: OCTOBER 11

11:15 AM – 11:45 AM
Lightning Talks

11:45 AM – 12:15 PM
Mobile Platform Unpanel

12:30 PM – 1:30 PM
Android Speed Geeking Round

1:30 PM – 2:30 PM
BlackBerry Speed Geeking Round

2:30 PM – 3:30 PM
iOS Speed Geeking Round

3:30 PM – 4:30 PM
Windows 7 Speed Geeking Round

4:30 PM – 4:45 PM
Announcement of Finalists for the
Ultimate Speed Geek-Off

DAY TWO: OCTOBER 12

12:00 PM – 1:00 PM
Final Speed Geek-Off

1:00 PM – 1:30 PM
Announcement of the
Mobile Platform Challenge Winner!

Hope to see you there!

If you think your app has what it takes to compete in this Challenge, please register at: **www.cloudmob.com**

DroidPlanet — Android Developers Conference presented by Silicon Valley Android Group

Days One & Two: Tuesday–Wednesday, October 11–12
10:30 AM – 5:00 PM
Room 29 A

FREE TO ALL REGISTERED ATTENDEES!

ORGANIZED BY

Silicon Valley
Android Developers

DroidPlanet is a two-day Android Conference providing a valuable technical and business information exchange for the Android ecosystem, from developers, entrepreneurs, to executives; from apps, devices, platforms, solutions, tools, to startups. Meet with leaders in the ecosystem, including Android experts, solutions leaders, and partners from around the world.

Tuesday, October 11, 10:30 AM – 5:00 PM

10:30 AM – 11:25 AM
Keynote

MODERATOR:
David Cao, *SVAndroid, GM of Mobile,* **BeyondSoft Consulting Inc.**

11:30 AM – 12:30 PM
Android Ecosystem: State of the Union

1:00 PM – 1:55 PM
The Google OS Family: GPad, Google TV, Android @Home, and Embedded Android

2:00 PM – 2:55 PM
From Android App Developers to Startup Entrepreneurs

3:00 PM – 4:20 PM
Android Startup Challenge

MODERATOR:
Silicon Valley Entrepreneurs

4:30 PM – 5:00 PM
Android Startup Award Ceremony 2011

For full list of companies for startup challenge, visit:
http://www.sventrepreneurs.net/events/21557731

Wednesday, October 12, 10:30 AM – 5:00 PM

10:30 AM – 11:25 AM
Introductions and Keynote

MODERATOR:
David Cao, *SVAndroid, GM of Mobile,* **BeyondSoft Consulting Inc.**

11:30 AM – 12:30 PM
Android Innovation Showcase:
New Devices, Tools, Accessories, and More!

1:00 PM – 1:55 PM
Android in Enterprise: Cloud, Security and Beyond

2:00 PM – 2:55 PM
Android App: Native vs. HTML5/Cloud

3:00 PM – 3:55 PM
Android Beyond Mobile: The War of Tablets

4:00 PM – 4:45 PM
Fireside Chat with the Android leaders

This event is also brought you by:

CTIA–The Wireless Association®
Silicon Valley Entrepreneurs & Startups
Mobile Innovation Forum
San Diego Android Developers

http://facebook.com/droidplanet
Twitter: @TheDroidPlanet
Join us: http://facebook.com/groups/svandroid

About the Silicon Valley Android Developers Group:

Silicon Valley Android Developers Group (SVAndroid) is the world's largest face to face Android Developer community. SVAndroid is also one of the most active communities in Silicon Valley. SVAndroid had been the launching pad for many Android apps, startups, new products, and solutions. Our current and past sponsors include Google, T-Mobile, Samsung, GetJar, DLA Piper, Linked in, Skye, Box.net, Beyondsoft, Access Growth, inMobi, TechCU, MotoDev, Sprint, DeviceAnywhere, AppCelerator, Admob, GreyStripe, Handmark, and many more. Visit http://android-android.net

Using Data.gov to Power Your Mobile Applications

Discover how 400,000 data feeds and the future of the Open Government Initiative can help you build better applications.

Day One: Tuesday, October 11
11:00 AM – 12:30 PM
Room 28 B

S V C G L

FREE TO ALL REGISTERED ATTENDEES!

the**efiia**group ***MOBILEGOV***

As a priority for the Open Government Initiative for President Obama's administration, Data.gov makes it easier for the public to find, download, and use datasets that are generated and held by the Federal Government. Data.gov provides descriptions of the Federal datasets (metadata), information about how to access the datasets, and tools that leverage government datasets.

This workshop will address how Data.gov can be accessed by developers, examples of how it has been used in government and industry, and what the future is for Data.gov and the Open Government Initiative.

SPEAKERS:

Chris Vein, *Federal Deputy CIO (invited)*
Jeanne Holm, *Chief Evangelist,* **Data.gov (invited)**
Tom Suder, *President,* **MobileGov**
Chris Gorman, *Managing Partner,* **The Efiia Group**

Open Mobile Solutions Presents: Developer Pitch and Round Tables

Day One: Tuesday, October 11
3:00 PM – 6:00 PM
Room 28 B

S V C G L

FREE TO ALL REGISTERED ATTENDEES!

OPEN
Mobile Solutions

Are you building the next big mobile application or service? Are you trying to raise venture capital or take your business to the next level? Does your business rely on building distribution relationships with mobile operators, application stores or OEMs? Do you want to learn about or share best practices for managing multiple applications across multiple apps stores?

Open Mobile Solutions—the business to business marketplace for the mobile application lifecycle, invites you to attend our fourth CTIA mobile developer/publisher event. This year we will lead off with 5 select companies presenting their mobile strategies to a panel of industry experts. Then we break out into a series of topical sessions that will drill down on key issues that affect mobile developers and publishers today. Round table topics include:

- Raising capital
- Multiplatform development/publishing strategies
- App Stores & Distribution strategies
- Monetization and business models
- Mobile Enterprise Apps
- Analytics

Stay tuned for details on how to be selected to present.

Storytelling through Advanced Mobile Content — Presented by Producers Guild of America-The New Media Council

Day Two: Wednesday, October 12
3:00 PM – 6:00 PM
Room 28 E

S V C G L

FREE TO ALL REGISTERED ATTENDEES!

3:00 PM – 3:15 PM

INTRODUCTIONS, SETTING THE TRANSMEDIA STAGE

What is the current definition of Transmedia? Has the ongoing debate over the term and its application complicated the efforts of producers in this new frontier of Storytelling through Advanced Content? Attendees will be provided with a Transmedia 101 overview.

3:15 PM – 4:30 PM

CASE STUDIES IN MOTION: MOBILE VIDEO AND STORYTELLING

As the mobile video marketplace expands, the realm of integrated storytelling across platforms has found firm footing within the entertainment industry, but where does mobile fit into this world of the Transmedia Narrative? During this 75 minute session, Transmedia innovators will showcase their success stories and discuss how the capabilities of the mobile platform provided them unique access to their audience. .

4:30 PM – 5:00 PM

MOBILE TECHNOLOGY AND ITS ROLE IN STORYTELLING

In this one-on-one moderated session, we will learn how specific technologies have guided the storyteller through the creation of advanced content.

5:00 PM – 6:00 PM

NETWORKING HOUR

Meet PGA Members and Transmedia Storytellers and discuss collaborative opportunities within the mobile space. There will also be an opportunity to learn about membership to the Producers Guild of America.

WIPJam—Day for Developers

Day Two: Wednesday, October 12
11:00 AM – 5:00 PM
Room 28 D

S V C E P

FREE TO ALL REGISTERED ATTENDEES WITH INVITE ONLY!

JAM'N WITH wip
Connecting Developers

ORGANIZED BY: wip wireless industry partnership

Come Jam with WIP at our Day for Developers! Leave the world of the suits behind and come in to a place that's all about you and building your success.

Mobile Enterprise 101

Our morning session will cover Mobile Enterprise 101—everything you need to get started to develop mobile apps and services for enterprise customers. Learn about what enterprise customers are looking for from mobile developers, how developing for the enterprise differs from developing consumer apps, and what you can do to take advantage of the opportunities in this booming market.

How To Make A Good App Great

In the afternoon, we'll cover How To Make A Good App Great, where you'll learn how to take your apps and services to the next level by incorporating new features from the hottest API and SDK providers. They'll show you how to make your app better, faster and cooler with their services, whether it's adding push notifications, geolocation, haptic, text-to-speech or another cool feature. Cooler apps mean more downloads and sales, and that's what we want to get you.

UnPanel

We'll wrap up with one of our signature UnPanels, where you get to put the speakers on the spot and get direct answers to your questions and insight into the issues you're dealing with.

WIPJam After Party

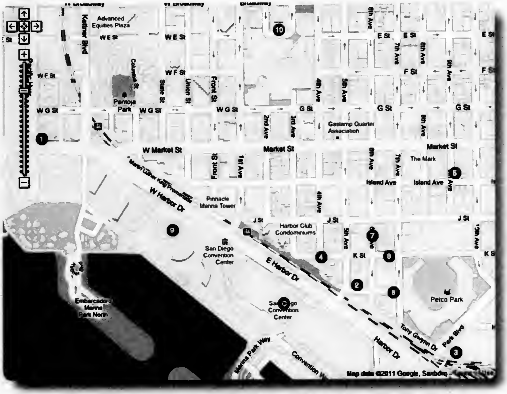
We'll wrap it all up with a great party!

Join us at our day for developers, where the focus is on you—getting your questions answered, meeting the companies and partners that are most important to you, and getting the tools and resources you need to succeed. We'll do it all in the WIP style, keeping things fast-moving, highly interactive, fun and informative. See you there!

Check our website for up to date information on speakers, sponsors and more:
http://www.wipconnector.com

CTIA Housing

Visit **www.ctiashows.com/travel** to see the most current list of hotels and room availability.



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W Market St
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W Harbor Dr
Pinnacle Marina Tower
1st Ave
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Market St
The Mark
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Harbor Club Condominiums
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Petco Park
Embarcadero Marina Park North
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Browse a complete list of available hotels through CTIA's online housing site at **www.ctiashows.com/travel.**

PHONE

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- ⑤ Hotel Indigo San Diego Gaslamp
- ⑥ Omni San Diego Hotel
- ⑦ Residence Inn San Diego Downtown Gaslamp
- ⑧ San Diego Marriott Gaslamp Quarter
- ⑨ San Diego Marriott Marquis & Marina
- ⑩ Westin Gaslamp Quarter

CTIA Enterprise & Applications Registration Packages

A Division of **CTIA–The Wireless Association®**

SUPER PASS *TOTAL ACCESS!*

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Get the pass that gets you everything! Access: CTIA VIP Club, The CTIA Power Series (Boardroom Sessions, Speed Session and Disruptathon), Exhibit Floor, CTIA Keynotes and ALL Partner Events.

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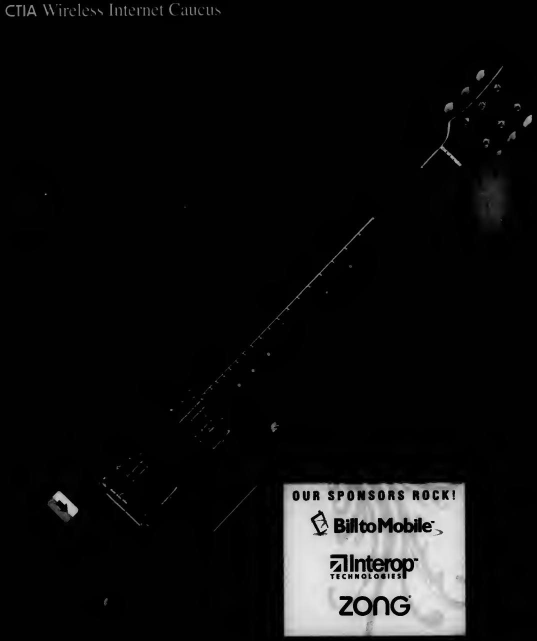

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"It's about bringing in extra evidence, not one killer attribute," says Colin Linsky, predictive analytics worldwide retail sector leader at IBM. But the real value of predictive analytics in fashion is not just that it can pick winners, Linsky says. "It also gives a strong indication of the why, and that's important in understanding what you should be doing when making merchandising decisions," he says.

On the other hand, predictive analytics doesn't always work as well when a new fashion doesn't follow previous patterns, when there's limited or no historical data for key attributes, or when the style falls into a different line, such as when it moves from dresses to sweaters, says the CIO of a large fashion designer and retailer that sells online and through more than 500 stores, who spoke on the condition that his name and company (we'll call it Company Z) not be identified. "Someone has to model that based on their knowledge, and that's where the art of merchandisers comes into play," the CIO says. "You still hear in the buying meetings, we *believe* this will happen. This is the forever battle of science versus art."

But none of this will work, he says, unless the right systems are in place to supply the same data, consistently, to all parts of the business. At Company Z, that means having a master data model and an enterprise service bus to move the data between subsystems, and to share data across sales channels and buyer silos. And final validation requires human review and approval across all functional areas, including plan allocation, production sourcing and finance, as well as approval by the merchants. "At the end of the day, if you don't have good data you use across the enterprise, the results aren't the same," the CIO says. "That's very important to predictive systems."

What's That You're Wearing?

STYLITICS WANTS TO KNOW

FORGET TOMORROW. Stylitics wants to know what you're wearing right now.

The newly launched social networking site for the style-savvy encourages its members to create a virtual closet of what they own, what they are wearing and what they are buying. It then shares the information with retail buyers, merchants and product planners so that the right merchandise appears in store windows and promotions can target hot items that will draw customers in. In exchange for sharing their information, Stylitics members can communicate directly with brands they buy and receive personalized style recommendations, special offers and other incentives.

The service, which launched its first beta in August, intends to make its fortune by selling access to member data as a subscription service. Using a dashboard, merchants can slice and dice the data to see what people are wearing and buying in real time, what styles are trending up or down and what other items are in the closets of customers who bought their products. And as the service builds a history, subscribers will be able to download and incorporate trending data for input into their own predictive analytic models, says Stylitics CEO and co-founder Rohan Deuskar.

Stylitics also gives consumers their own fashion intelligence. "We give them the ability to do the same things the brands can do," Deuskar says. For example, they can see what people are wearing in New York this week and what outfits they should pack for a trip there. Success will depend on whether Stylitics can get members to keep a running inventory of their closets, their purchases and what they wear each week. Early test results have been good, Deuskar says. But, he acknowledges, "we will have to do a fantastic job to keep them involved."

– ROBERT L. MITCHELL

The CIO's company isn't the only retailer doing this, but it's ahead of the curve, according to IBM's Gupta. "Everyone says they understand attributes, but how to use them to predict demand is not something a lot of companies do well."

Mining Social Intelligence

To augment traditional analytics, some retailers and fashion designers have applied analytic techniques to social media interactions to get real-time feedback on where fashion is going and what consumers think of their upcoming designs.

Social analytics are changing the game in retail, says Doug Stephens, president of research consultancy Retail Prophet. "We're moving from an outside-in approach, to a world where inventory and demand planning and product development will all be driven by social media," he says.

At one large retailer that creates its own fashions, designers use the feedback in an iterative loop to evolve fashion items, tuning each for the most enthusiastic consumer response, according to an IT executive who spoke anonymously.

First Insight offers a service that tests how consumers will react to new fashions by engaging them in activities, such as playing games at social media sites. "The application can be used for high-fashion items where there is very little history," says Greg Petro, the company's CEO. First Insight asks users what they think others would pay for test products and gauges their general sentiment about them. What makes the results different from a focus group is that First Insight determines the "predictive relevancy" of participants' responses by seeding the exercise with products with known outcomes. It examines how their predictions match up with what actually happened with those items, assigns a weighted predictive value to each user, and factors that in when aggregating the results to predict winners and losers for the fashions on which they're building a demand prediction. Deliverables include not just which products will sell, but suggested price ranges as well. The application is particularly useful for predicting consumer response to high-fashion items that have little or no history to go on, says Petro.

Wild Things LLC, a manufacturer of military and alpine clothing and related gear, was one of First Insight's first customers. CEO Ed Schmults, who is now on the vendor's advisory board, says he first used the service to choose the best style for a corporate logo and is using it to gauge consumer reactions to clothing styles that will launch next year under its newly licensed Smith & Wesson brand.

Wet Seal CEO Ed Schmults says predictive analytics can reduce risk in fashion merchandising.

"Our consumer lines are absolutely driven by fashion. We want to understand customer receptivity to the product, the color, the price point," he says. "This is a very powerful tool for moderating that risk."

Elie Tahari looked at First Insight's technology, and while Aytaman says it was technically "pretty accurate," it went nowhere with store buyers. "Although they liked the idea, they didn't trust it," he says.

Gilt Groupe, which offers members-only flash sales of high-fashion items online, uses a combination of traditional analytic tools from SAS and collective intelligence from a startup company to predict which styles or brands will be winners. Stylitics, a social networking site launched this summer, uses a methodology similar to that of First Insight, but it focuses on the consumer's intentions and what they already have purchased rather than on how they think others would react to a fashion or product line, says Tamara Gruzbarg, senior director of analytics and research at Gilt (see story, page 25).

Four years ago, Gilt knew exactly what its customers' tastes and brand preferences were. Today, customers are less brand-oriented, so Gilt relies on predictive analytics to help buyers understand what will sell. But, Gruzbarg cautions, you have to know what you're looking for. "The analytic tools are only as good as the data on which you're elaborating. Understanding what the most relevant information is, that's critical," she says.

Manya Mayes, director of predictive analytics at Attensity, says text analytics are being used on data provided from social media sites such as Storify, which lets online users create their own visual stories about what outfits they like. "The analytics identify which clothing combinations are put together most often and which ones they are keeping," she says.

Merchants are also mining "fashion haul" videos, in which teens show off goods they bought at the mall and voice strong opinions about them. Some fashion haul posts have gone viral, with as many as 1 million hits in the first week, says Jill Puleri, vice president of global retail at IBM, citing videos by young women named Blair Fowler, Ellie and Fiona. "That's something you can input into your trending models," she says.

Predictive analytics reduces the overall risk on fashion selections, allowing the business to take some chances, says Schmults. "The art is introducing things that consumers wouldn't have thought about before," he says.

Crowdcast offers a different spin on collective intelligence. Its service lets employees within an organization, such as buyers, store managers or employees, bet virtual money on which products will be winners. "The collective wisdom of several merchants is usually better than the single estimation of one," says Greg Girard, an analyst at IDC. In the Crowdcast model, participants win more money when they're right, allowing them to place bigger bets, which gives them greater weight when all bets are tallied. In this way, he says, a group of buyers can all bet on this season's line of clothing. So far, most users have been manufacturers, which use the tool to predict when products will ship or how well they will sell, but Crowdcast is pitching it to fashion retailers. "When you have very little data to make big decisions, that's where you can benefit from collective intelligence expertise," says Mat Fogarty, the company's founder and CEO.

Timing is another challenge. It's not enough to know that a fashion item keys into a popular trend, says Company Z's CIO. Retailers need to know when those trends will hit. Company Z uses crowd-sourcing and collective intelligence tools similar to what First Insight and Crowdcast offer. But it also does test marketing in stores and through its e-commerce channel and then feeds the results into its data warehouse, where it's used as additional input for its predictive modeling engine. "Predictive analytics doesn't change the way we run our business," the CIO says. "All it does is streamline the processes so we're more analytical."

Pulling It Together

The impressions and insights from social media analytics can be fed into traditional predictive analytic engine models, providing another input to help determine fashion winners, says IBM's Linsky. First Insight's data can fit within predictive analytic data models, says Petro. "It's just a matter of mapping it," he explains.

Going forward, social analytics will reshape the merchandiser's job into "social merchants," says Girard. But for now, using analytics — social or otherwise — to pick fashion winners is still a "missionary market," with many retailers still on the sidelines, merchants and designers not completely sold on the idea, and everyone waiting for the first big success story.

As for cultural resistance, Petro thinks the technology will gradually win over merchants as they see the results and understand where the tools fit. Predictive analytics is no substitute for human judgment, he says: "It's an instrument in the cockpit, not a replacement for the pilots themselves." ◆

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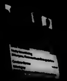

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Wanted: BI Stars

Demand for tech workers with that rare blend of analytics and business skills is on the rise. *How companies are coping with the talent shortage.*

BY MARY K. PRATT

CENTERSTONE Research Institute built a team of business intelligence specialists for its four-year-old analytics division by hiring some new talent and bringing in some of its own IT and business workers and training them in the social sciences or technical skills they lacked.

But Russell Galyon, CRI's director of analytics, says he's now finding it tougher to expand the eight-person unit. Galyon says he can't find the unique combination of skills he needs in CRI's existing pool of employees, and he can't easily find that talent in the open labor market, either. Even a headhunter he hired to help with the search has found the task challenging.

"We get people who meet the tech qualifications, they have programming skills, but they don't have the skills to go into a meeting with a business owner and take abstract ideas and make them understandable," he says. "And that's hard to train for."

Galyon isn't the only one having trouble filling BI positions.

In a recent *Computerworld* reader poll, 46% of the 52 respondents said they are either currently hiring BI specialists or plan to do so in the next 12 months. Of those who are hiring, 71% said they feel that finding and recruiting BI specialists is either somewhat difficult or very difficult.

Don't expect it to get easier anytime soon.

McKinsey Global Institute's May 2011 "Big Data" report says that by 2018, demand for people with deep analytical talent could be 50% to 60% greater than the supply in the U.S.

The hiring challenge stems from the basic rule of supply and demand: Companies are creating more positions than there are qualified workers. But the roots of that equation are deep, and relate to the evolution of business intelligence software and the organizational use of data.

As organizations become increasingly sophisticated in the way they use the vast volumes of data they collect, they're finding that they need professionals with unique skills who know how to handle it. But these professionals aren't strictly IT folks, nor can they be business specialists who don't have deep technical acumen. Rather, this is an emerging hybrid position that requires someone who can manage data, handle software, ask the right business questions and present results.

"You're combining technical, functional and business acumen. It is a unique breed, and there aren't a lot of them out there," says Stacy Blanchard, who leads the organization effectiveness services and human capital unit at Accenture Analytics.

Continued on page 30

BRIAN STAUFFER ILLUSTRATION

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Continued from page 28

But companies must find people with these skills or train them if they want to compete in the future, Blanchard says.

According to a 2010 Accenture report called "Getting Serious about Analytics: Better Insights, Better Outcomes," a growing number of companies are developing advanced analytic capabilities to gain a competitive advantage. Those companies realize that analytics is more than just collecting and storing data, and it's more than just deploying BI technologies. It's about embedding analytics into their decision-making and strategic processes and using data to drive decisions.

Not surprisingly, Blanchard says demand for BI specialists increases as the use of BI matures at those companies — and as others inch toward that model.

Where Does BI Sit?

But just as the maturity of BI deployment varies from company to company, so does the way companies deploy BI specialists, Blanchard and other industry observers say.

David Menninger, an analyst at Ventana Research, says his firm has found that BI responsibilities sit in one of three places: in business units, in the IT shop or in an IT operation within a business unit, with the best scenario for any company being one that allows IT and business people to work collaboratively.

"When you can establish that relationship between IT and the lines of business, that produces the best results," Menninger says, noting that there are two functions — management of information and analysis of it — rolled into business intelligence.

"I don't think you can do that in one function. You need two resources to do those tasks," he adds, which is why IT departments working with business divisions is crucial if companies want to get significant value from their BI investments.

In fact, his research found that "innovative companies are twice as likely to use their IT department to meet business requests and three times less likely to 'outsource' [that is, rely on off-the-shelf analytics or outside consultants] compared to tactical organizations."

"A good line-of-business manager will understand the type of analyses they want to perform and will look to IT to accomplish those things. A good IT manager or CIO will focus on the technologies that will enable their business lines to do those things and will take those concepts to the business functions," he says. "The idea is you've got to get those two organizations working together. They both have a role to play. In an effective organization, once a technology or application has been selected or created, IT is responsible for making processes efficient."

Like others, Menninger says these responsibilities require highly skilled workers who can work between business and IT, but he adds that many companies are having trouble locating such people — whether they want to use existing employees or hire new ones.

"Everyone is competing for a scarce set of resources, so the best option is to train," he says, noting that IT professionals could learn more analytical, business and statistical skills and business people could learn about data management and programming.

Some organizations are successfully finding ways around any BI labor shortage.

Carl Ganter, managing director of Circle of Blue, an international network of journalists, scholars and citizens focused on water-related issues, says BI tools have been critical to the organization's work. He says people in all divisions at Circle of Blue have received training in business intelligence and on the QlikView BI technologies the organization uses.

"There is a learning curve, but we're a very nimble, innovative group. So we start by asking what do we want to know and we backtrack and figure out how to get that. Then we rely on partners, staff and vendors to do it," he says. "Nimble organizations can do that, even if they're larger, but siloed organizations can't."

Most, however, haven't been as successful in training or recruiting staff.

Brian Veara, manager of decision resources at ThedaCare, a community health system based in Appleton, Wis., says he needs a balance of technical expertise, business knowledge and analytical acumen within his staff of 26. "Hiring people with all three skills is difficult," he says. "It is a set of skills that's in short supply, and it has to be developed. You can't just say, 'I want a BI specialist, come work for me.' Because of those three buckets, one or two will be severely underdeveloped and you'll have to round out your team."

Veara expects that to be the case for a while: "This is a highly skilled, highly in-demand position, and that [demand] will only increase in the future." ◆

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

Building a Better BI Specialist

In 2008, students at the University of Virginia's McIntire School of Commerce asked associate professor Barbara Haley Wixom to teach them SQL. Recruiters, they said, wanted them to know that database language.

So Wixom, a data warehousing and business intelligence specialist, held a special three-hour evening class that drew about 80 students willing to give up an evening and earn no credits just to learn what was becoming a hot skill that would look good on their résumés.

Given that demand, Wixom says lessons in SQL and other BI skills became part of the regular course work the following semester, as the college started to incorporate a bigger focus on analytics and BI technologies into its curriculum.

Wixom, co-author of a 2010 report called "The State of Business Intelligence in Academia," says more and more colleges and other institutions are developing academic programs to teach these skills. The idea is to prepare workers for companies that need to maximize the value of their investments in business intelligence.

Others active in educating students include IBM, which teamed up with Columbia, DePaul, Fordham and Yale to provide analytics training, and Accenture, which developed its own Analytics Academy.

"Universities are trying to catch up and produce the right candidates, and there are some leading schools who are getting there, but that's going to take time to develop," Wixom says. "In the meantime, the hiring is just going to be really difficult."

– MARY K. PRATT

Continued from page 28

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Computerworld's

Digital Spotlight on Cloud Security

Data security regularly tops the IT manager's list of concerns about cloud computing. Yet some experts say corporate data is actually more secure in the cloud than it is in many typical IT shops. *Computerworld* covers these issues and more in the Digital Spotlight on Cloud Security.

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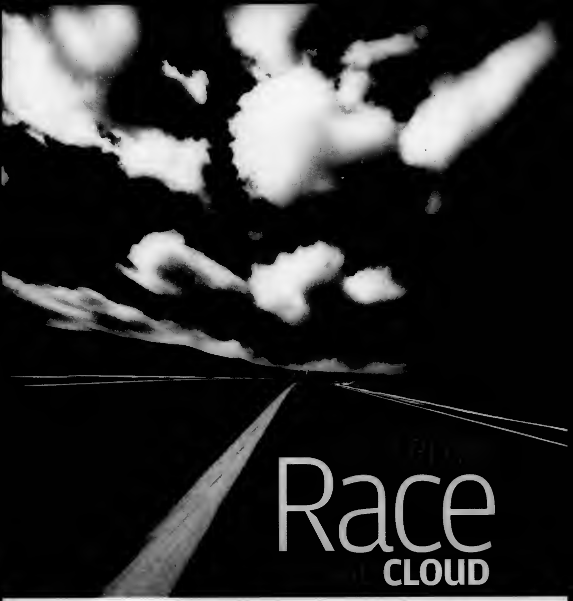

Race
CLOUD

Agencies are now grappling with the hard realities of making the 'cloud first' policy work.

BY MARY K. PRATT

THE GOVERNMENT SECTOR is on a fast march to the cloud, but Robert Rosen wants to pause for a breath.

"I've been looking at the cloud for a long time, and it's not as simple as all the vendors want to make it seem," says Rosen, CIO of the National Institute of Arthritis, Musculoskeletal and Skin Diseases at the National Institutes of Health in Bethesda, Md. "The federal government isn't this uniform user of IT. So there's no one-size-fits-all. There are places it fits fine, others where it doesn't, and

Continued on page 34

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this great middle area where it's 'maybe, maybe not.'"

So even though he's working under a new federal mandate known as "cloud first," Rosen is moving cautiously. He's evaluating how to use cloud computing to store data that his agency doesn't access frequently, a move that could help eliminate the need to build a new data center. But he says he wants to cover all the bases to make sure he doesn't make mistakes. He's looking at the data itself to determine security needs, calculating bandwidth requirements and devising an exit strategy in case he wants to switch vendors or move out of the cloud.

"It's a deliberate process we're going through. We're just not going to leap," says Rosen, a past president of Share, an IBM user group. Still, the pressure is on Rosen and his colleagues to move to the cloud.

Vivek Kundra

Last December, former U.S. CIO Vivek Kundra established the cloud-first policy, telling federal CIOs to move three services to the cloud within 12 to 18 months. In a 25-point plan to reform federal IT management, Kundra cited cost savings, flexibility and speed of deployment as reasons for adopting the policy.

Now, IT leaders like Rosen are grappling with the details involved in making the policy work, but also seeing early successes moving some functions to the cloud as they work toward migrating truly strategic systems there.

"This is a paradigm shift," says Shawn Kingsberry, CIO at the federal Recovery Accountability and Transparency Board and a proponent of cloud computing.

Kingsberry considers this a unique point in IT history, akin to the late 1990s, when IT departments went through drastic upgrades during the run-up to Y2K. Today, dwindling dollars and a shrinking workforce are forcing IT leaders to once again think big. "Now you have a perfect situation where the stars are aligned to make massive change," he says. "When you look at what this means, federal government has the opportunity to make moves forward."

Kingsberry's agency moved its Recovery.gov website to Amazon.com's EC2 cloud service in April 2010. He says the agency decided to make the leap after successfully using the cloud for testing, although IT leaders at the agency still performed a rigorous analysis before making the move. They considered, among other factors, how cloud computing would fare in terms of performance, cost and security.

So far, the cloud has delivered, says Kingsberry. Using cloud services saved about $750,000 in the first year for Recovery.gov, a site for sharing data and information related to the federal American Recovery and Reinvestment Act of 2009. Kingsberry says he expects more savings in the future, since the site will be able to scale up without requiring investments in new hardware.

"Obviously, one of the key drivers behind the federal government [cloud initiative] is Vivek Kundra's [push] for cost-cutting," says JP Morgenthal, cloud evangelist at Smartronix, a Hollywood, Md.-based consultancy that helped the Recovery Accountability and Transparency Board move Recovery.gov to the cloud.

Continued on page 36

Falling Behind Schedule

Federal IT leaders are moving ahead with cloud computing projects, but it appears that many of them aren't moving as quickly as mandated by the "cloud first" policy.

[illegible]

52% will move the first service to cloud computing in the next 12 months.

48% will move the next two services to the cloud within the 18-month time frame.

Faulty Road Map?

The General Services Administration launched the Federal Risk and Authorization Management Program (FedRAMP) last November [illegible]

64% of 167 federal government IT leaders surveyed said they understand FedRAMP but aren't optimistic that it will help.

56% said it will neither facilitate nor accelerate federal cloud adoption.

67% said it won't make federal cloud computing more secure.

Glacial Change

More and more federal IT leaders are moving to the cloud.

[illegible]

57% of the respondents reported that an active move to cloud computing was under way in early 2011, compared with 54% in late 2009.

14% said they are undertaking a cloud pilot, versus 16% in 2009.

None of the CIOs reported that they don't have cloud plans, compared with 8% in late 2009.

Continued from page 32

this great middle area where it's 'maybe, maybe not.'"

So even though he's working under a new federal mandate known as "cloud first," Rosen is moving cautiously. He's evaluating how to use cloud computing to store data that his agency doesn't access frequently, a move that could help eliminate the need to build a new data center. But he says he wants to cover all the bases to make sure he doesn't make mistakes. He's looking at the data itself to determine security needs, calculating bandwidth requirements and devising an exit strategy in case he wants to switch vendors or move out of the cloud.

"It's a deliberate process we're going through. We're just not going to leap," says Rosen, a past president of Share, an IBM user group. Still, the pressure is on Rosen and his colleagues to move to the cloud.

Last December, former U.S. CIO Vivek Kundra established the cloud-first policy, telling federal CIOs to move three services to the cloud within 12 to 18 months. In a 25-point plan to reform federal IT management, Kundra cited cost savings, flexibility and speed of deployment as reasons for adopting the policy.

Now, IT leaders like Rosen are grappling with the details involved in making the policy work, but also seeing early successes moving some functions to the cloud as they work toward migrating truly strategic systems there.

"This is a paradigm shift," says Shawn Kingsberry, CIO at the federal Recovery Accountability and Transparency Board and a proponent of cloud computing.

Kingsberry considers this a unique point in IT history, akin to the late 1990s, when IT departments went through drastic upgrades during the run-up to Y2K. Today, dwindling dollars and a shrinking workforce are forcing IT leaders to once again think big. "Now you have a perfect situation where the stars are aligned to make massive change," he says. "When you look at what this means, federal government has the opportunity to make moves forward."

Kingsberry's agency moved its Recovery.gov website to Amazon.com's EC2 cloud service in April 2010. He says the agency decided to make the leap after successfully using the cloud for testing, although IT leaders at the agency still performed a rigorous analysis before making the move. They considered, among other factors, how cloud computing would fare in terms of performance, cost and security.

So far, the cloud has delivered, says Kingsberry. Using cloud services saved about $750,000 in the first year for Recovery.gov, a site for sharing data and information related to the federal American Recovery and Reinvestment Act of 2009. Kingsberry says he expects more savings in the future, since the site will be able to scale up without requiring investments in new hardware.

"Obviously, one of the key drivers behind the federal government [cloud initiative] is Vivek Kundra's [push] for cost-cutting," says JP Morgenthal, cloud evangelist at Smartronix, a Hollywood, Md.-based consultancy that helped the Recovery Accountability and Transparency Board move Recovery.gov to the cloud.

Continued on page 36

Falling Behind Schedule

[illegible] will move the first [illegible] cloud computing in the next [illegible]

48 will move the next two [illegible] within the 18-month time frame.

Faulty Road Map?

64% of 167 federal government IT leaders surveyed said they understand FedRAMP but aren't optimistic that it will help

56% said it will neither facilitate nor accelerate federal cloud adoption.

67% said it won't make federal cloud computing more secure

Glacial Change

[illegible] of the respondents reported that an active move to cloud computing was under way in early 2011, compared with 54 [illegible] in late 2009

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[illegible] of the CIOs reported that they don't have cloud plans, compared with 8 [illegible] in late 2009

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Classified Data? Not in the Cloud

IT leaders are constantly weighing cloud computing's benefits against its security risks.

Continued from page 34

Big Bucks on the Line

The amount of money at stake is significant. In its "Federal Cloud Weather Report," released in April, MeriTalk, a social network for government IT professionals, found that cloud implementations could produce $14.4 billion in savings in the first year.

The report, which was underwritten by virtualization vendor VMware, also noted that 64% of 167 federal CIOs and IT managers surveyed in January expect cloud computing to both reduce costs and improve service.

In his Feb. 8, 2011, "Federal Cloud Computing Strategy" report, Kundra listed other benefits beyond cost containment. He said the cloud could create a more agile, responsive and scalable infrastructure that would support more collaboration and innovation — the same factors that nongovernment IT leaders cite as reasons for moving to the cloud.

Several government projects have already yielded such returns.

The U.S. Treasury Department moved its public-facing websites, including Treasury.gov, to Amazon cloud services earlier this year, with help from Smartronix. Morgenthal says the move enabled the site to be more flexible and scalable.

Analysts point to other cloud initiatives that are yielding cost reductions and service improvements.

"Certainly the migration of USA.gov to a private cloud hosted by Terremark [now part of Verizon], as well as the early cloud development at DISA [the Defense Information Systems Agency] and at NASA, are great examples," Gartner analyst Andrea Di Maio said in an email.

DISA's development of the Rapid Access Computing Environment (RACE) cloud infrastructure is an example of a successful government cloud initiative, agrees Deniece Peterson, a federal industry analyst at Deltek, a Herndon, Va.-based enterprise software vendor whose customers include federal agencies and government contractors. Other successful cloud projects include the U.S. Army's deployment of Salesforce.com and the Customs and Border Protection agency's use of the cloud for its customer relationship management application, she adds.

This spring, the Army announced that it had completed the first phase of a migration of email services to the DISA cloud; officials estimate that the move will save $100 million annually.

Hurdles to Clear

Even though there have been early victories in the race to the cloud, analysts and government officials alike acknowledge that there are obstacles on the path ahead. Concerns about security, funding and ROI, as well as political opposition, could impact what moves to the cloud and when it goes there. Meanwhile, cultural resistance to change and an institutional reluctance to share resources could hinder adoption of cloud computing even when there are strong business cases for it.

Indeed, in May the Army learned that the House Emerging Threats and Capabilities Subcommittee cut its funding for the email cloud migration project from a requested $85.4 million to just $1.7 million, with subcommittee members saying they want to see a cost-benefit analysis before they will agree to provide further support.

Peterson says that many agencies will have to work with limited funding, even in cases where they can demonstrate clear benefits from moving to the cloud.

"Budget constraints and a lack of resources are always in the mix of being top concerns or challenges," says Tim Herbert, vice president of research at the Computing Technology Industry Association (CompTIA), which has surveyed government IT leaders on subjects such as cloud computing. Other issues that could slow or halt the move to the cloud include slow-moving bureaucracies, fear of change, lack of interoperability between legacy and cloud-based systems, the challenge of coordinating technologies across agencies, and a lack of skilled personnel, he says.

In MeriTalk's recent study, 79% of the federal CIOs polled said budget constraints are a top obstacle to implementing cloud computing, and 71% said security concerns are preventing cloud adoption. Some of those issues could also influence what model of cloud computing — private, public, community or hybrid — federal agencies adopt.

Some agencies are large enough to build their own private clouds and still reap financial benefits, Peterson says. But many others are too small to handle such a move and wouldn't see any cost benefits from doing so. That's not to say, however, that there isn't a potential for big savings with private clouds. Peterson points out that large agencies could build private clouds and then sell capacity to smaller agencies under a shared-services model.

But for that model to work and produce a strong ROI, government entities would have to move beyond their often parochial outlooks and build a culture that embraces cross-agency coopera-

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But for that model to work and produce a strong ROI, government entities would have to move beyond their often parochial outlooks and build a culture that embraces cross-agency cooperation, say Peterson and other analysts.

"If everyone builds their own private cloud, you won't get the cost savings," Peterson says. "The big thing is, we don't want to see a bunch of cloud stovepipes popping up. That's how the government operates now."

Public, Private or Hybrid

Analysts say that government agencies, like their private-sector counterparts, are trying all of the cloud options to see which models work best in certain situations.

BANDWIDTH MANAGEMENT
INTRUSION PREVENTION
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TOUGH QUESTION #18

WHO MAKES THE HIGHEST PERFORMANCE LOW LATENCY NEXT-GEN FIREWALL?

SONICWALL ENTERPRISE.

SONICWALL

Government entities that are implementing cloud computing are primarily doing so in one of three ways, according to Marie Francesca, director of engineering operations, and Geoff Raines, senior principal software systems engineer, at The Mitre Corp., a government contractor based in Arlington, Va.

One is to use commercial services such as those offered by Amazon and Google. Examples include the migrations of Treasury.gov and Recovery.gov to Amazon's cloud service.

The second is to share services within the government, where one agency acts as a service provider for others. Examples of this are DISA's RACE system and NASA's Nebula.

The third option is to build a private cloud for an organization's exclusive use.

Francesca and Raines point out that government CIOs have such diverse systems that they can legitimately use any of those approaches, depending on the needs of the applications and data slated for migration to the cloud.

The General Services Administration and the National Institute of Standards and Technology (NIST) are helping federal agencies with their cloud computing moves, according to Francesca and Raines.

The GSA is setting up contract vehicles and schedules that will allow agencies to purchase commercial cloud services in a quicker and more uniform way, they explain. The website Apps.gov will provide a central point for information on this initiative. They say the GSA had already been providing federal agencies with a uniform mechanism for handling other types of contractors.

Meanwhile, NIST is defining cloud concepts, identifying standards and organizing security research.

Despite such guidance, the reality is that many federal entities aren't yet moving to the cloud.

According to MeriTalk's report, 79% of federal CIOs said their agencies aren't adopting the cloud-first policy, and only 64% are planning to embrace that approach in the next two years.

Moreover, at the time of the survey, only 17% of the federal CIOs were using infrastructure as a service, while 15% were using software as a service and 13% were using platform as a service. However, 20% said they were planning to move to infrastructure as a service, 22% were planning to start using software as a service, and 19% said they had a platform-as-a-service project in the works.

Support for the initiative continues even though Kundra left his CIO post in August to take a fellowship at Harvard University.

"Vivek is the visionary guy, but the next step now is really around policy and governance," says Morgenthal. "These are less visionary and more detail-oriented, so in certain regards, it's good timing, so whoever comes in next can be more structured and eliminate those hurdles."

Kingsberry says he thinks the government should act faster. "Federal still doesn't move at the pace that it can. There's risk aversion throughout it. And because of that, there isn't going to be this massive move," he says. "But this is a journey, and there are steps. There will be stop points, and right now this is one of the stop points. The next step is for federal as a whole to embrace and understand the performance characteristics for actually making this move."

But Rosen says the move to cloud computing shouldn't be thought of as a race. "My approach is, let's start with something simple, something we can encapsulate, and start with that and then move that into the cloud," he says, noting that IT grew wary of megaprojects for a good reason — in the past, they often led to big failures. "I'm trying to do [cloud computing] in ways so we don't make mistakes and waste a lot of money, and if we find it doesn't work, we can back out."

Perhaps, then, despite all of the hype around the benefits of cloud computing, the migration of federal IT to the cloud won't be an all-out sprint so much as a well-paced marathon. ◆

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

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Security Manager's Journal

MATHIAS THURMAN

Assessing the Company's Apps

WHEN YOU'RE in charge of a company's security, you have to actively seek out its weaknesses and then determine how to shore them up. That's what I've been up to lately, as an offshoot of my efforts to harden the DMZ.

Globally, we have about 40 servers in our DMZ. I'm fairly confident that they are locked down, patched and protected with anti-malware software. I'm also fairly confident that the DMZ firewalls are properly configured to minimize our exposure. What I am not confident about is the security of the applications residing on those servers. We have too many Internet-facing apps that haven't been properly vetted by me and my team. Part of the problem is that during the past couple of years, our company has made several major acquisitions without conducting security due diligence.

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Prodding me to action was the recent rash of hacks, most of them owing their success to poorly architected Web-based applications. Each quarter, I have a budget line for "penetration and vulnerability assessments." Because our physical security program is extremely weak, I've been spending that money on physical penetration testing. But that has become an exercise in paying someone to tell me things I already know. For example, I didn't really need to spend $20,000 for a consultant to tell me that he could create a fake company badge and piggyback behind someone else to gain access to our facilities. So this quarter, I decided to spend the money on a third-party assessment of our Internet-facing applications.

Right off, the consultant found that an e-commerce application would allow a customer to obtain software without paying for it just by modifying a URL. Since the problem is so similar to one I myself warned about in my recent article about enterprise search, it was very embarrassing.

The assessment also revealed that in another of our Web-based applications, someone could intercept and then manipulate password-reset traffic to change a customer's password. Ouch!

Yet another application runs on top of a popular social collaboration platform, allowing users to share documents. The environment is open, meaning anyone can join and share information or download our product documents. The ugly discovery was that anyone could download a document, make changes to it and then upload it back to the same location with the same name. This could prove disastrous if changes were made to our products' specs. Fortunately, this issue was remedied with a simple configuration change — but again, it was embarrassing.

Another problem was found in an application that has been capturing customer information without SSL encryption. We've been doing a good job of encrypting the initial log-on page, but the rest of the application wasn't encrypted.

There was good news as well. Our applications didn't seem to be susceptible to SQL injection, which has been a factor in many recent attacks.

On the other hand, we were susceptible to many variations of cross-site scripting, another popular method of attacking companies.

I'll be presenting the results of this assessment to the various application groups. After that, I'll strip out the good stuff and prepare a remediation tracking spreadsheet that describes each issue (with reference to the appropriate section of the comprehensive assessment report) and lists remediation recommendations, due dates and the person responsible for eliminating the problem. The spreadsheet will make it easy for me to tell at a glance the status of each issue.

And, of course, I'll be briefing our application team to ensure that we don't make the same mistakes as we develop or acquire other applications. ◆

*This week's journal is written by a real security manager, **"Mathias Thurman,"** whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

Trouble Ticket

» [illegible]

» [illegible]

We have too many Internet-facing apps that haven't been properly vetted by me and my team.

Security Manager's Journal

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Assessing the Company's Apps

A third party peers at the Internet-facing applications and finds several problems that need to be addressed.

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Trouble Ticket

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OPINION

PAUL GLEN

Collaboration's Fragility

Collaboration is a fragile thing, difficult to create, and easy to break.

WE ALL KNOW that collaborating with other departments is hard. We all have visceral memories of failed projects, outrageous behavior and painful betrayals. When my colleagues talk about these experiences, I can see the sadness and anger in their eyes. Even decades later, the wounds remain raw, the lessons learned fresh, and the resentments intact.

But most of us have had great cross-functional collaborations as well. Ask about those magical projects when everyone pulled in one direction, unified, synchronized and coordinated, and eyes twinkle with excitement. When groups face tough problems and overcome them together, the warm feelings last a lifetime.

Clearly, we all want every collaborative effort to be one of those ideal experiences, but we get the disasters much more often. This isn't too surprising, really. Everything has to go right to make a collaboration work well, but only one or two things need to go wrong to undermine that cooperative ecstasy. Collaboration is a fragile thing, difficult to create, and easy to break.

So what stands in the way of building more good experiences? Many of the obstacles are well known, but others are much more subtle. I tend to think of them in categories.

Structural obstacles are rooted in organizational configuration and geography. It's hard to work with people you've never met or who work when you sleep, speak a different native language or have unfamiliar cultural assumptions. It's also hard to build consensus across organizational boundaries. Interests and incentives often conflict. Sometimes, people are parochial and fight for whatever benefits themselves or their group, or they conflate the interests of their group with those of the organization at large.

Legal obstacles arise out of rote enforcement of rules, be they contractual, procedural or regulatory. Unfeeling, mechanical enforcement of rules often undermines the trust required for collaboration, especially when people use regulations as substitutes for relationships. Rules are sometimes specifically designed to minimize collaboration, imposing checks and balances on negative behaviors that can result from collusion. And sometimes processes that are designed to balance competing interests reinforce antagonism unnecessarily in practice.

Technical obstacles are imposed by the tools we use. Each technology embodies a view of the world embedded in the designer's vision. To use the tool effectively, we need to understand and adopt that view. When the way a tool is used comes into conflict with the way businesses run, we also come into conflict.

Social obstacles are the most pervasive and difficult to deal with. They are rooted in the human experience of group life, of the differences between organizational, departmental and national cultures. It's easy to see that language is a barrier to communication. But more subtle obstacles are at play as well. Each subgroup develops patterns of thinking and behaving that make them successful in the work they do. For example, technical people often view everything as either a problem or a solution. If groups' habits of thought are incompatible, collaboration is undermined.

Clearly, it is possible to build outstanding cross-functional teams. Just remember that you are building something that's very fragile and expands slowly.

In short, to create collaboration, don't kill it. ◆

Paul Glen is the CEO of Leading Geeks, an education and consulting firm devoted to unlocking the value of technical people. You can contact him at info@leadinggeeks.com.

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Career Watch

ASK A PREMIER 100 IT LEADER

Joseph Eng

The CIO at **JetBlue Airways** *answers questions about what to include on a résumé, the qualities that matter most in employees, and more.*

I have been reworking my résumé and think it's too long, but I hate to cut out any of my experience. I have been in the IT industry for over 30 years. What approach should I take? While you don't want to sell yourself short in terms of your accomplishments and experiences, take your audience into consideration. Who are they? What are they looking for? Which of your accomplishments most distinguish you from others? Will hiring managers understand what you're saying? Will they even be interested in what you're saying? In other words, rather than focusing on the overall length, make sure that what you say presents you in a way that your audience will understand and appreciate.

As a manager, what are the qualities you value most in your employees? I'm not necessarily talking about tech skills. While great tech skills are important and sometimes even a rare commodity, I also value people who can bring their tech skills and work well in a team environment, have an interest in, and even a thirst for, the business, and have the tenacity to deliver and be accountable to achieve results. There are very few circumstances when an individual can get a job done alone. The problems we need to solve and the opportunities we need to address as technology professionals require us to collaborate. And we collaborate with a purpose in solving something to move a business forward. Something else to think about: Too often, IT is known for never-ending projects. IT professionals and teams that are known to get the job done will garner the praises of the business.

In the course of your career, what do you wish you *hadn't* done? Not to be a Pollyanna, but when I look back at my career, I can't say that I wish I hadn't done one thing or another. Sure, I have run into problems and have made my share of mistakes, but I don't wish they hadn't happened. At the time, I might have felt differently. But in retrospect, all of my experiences, including the mistakes, have added to my current capabilities and knowledge.

Apps for Jobs

Several free applications make it possible to search various jobs databases while on the go. We took a look at what users had to say about smartphone jobs apps at Appitalism.com and other sites:

A+ IFindJob

iPhone

■ The IFindJob app had no reviews at Appitalism and only two reviews at the Apple App Store, both complaining that searches brought up the message "No results found."

Find Your Next Job

BlackBerry

■ At BlackBerry App World, the Find Your Next Job app got 11 reviews, where users either loved it (5 stars, "Great for finding a job") or hated it (no stars, "Don't waste your time"). Some users seemed to have trouble getting a connection with the app.

Job Search

Android, iPhone, Palm WebOS, Windows Mobile

■ This Indeed.com app got one 5-star review at Appitalism and a 3.5-star average at the App Store. Many App Store reviewers said they didn't need the app because it was more effective to use the iPhone's browser to access the Indeed.com website directly. At the Android Market, the overall rating was 4.5 stars.

Mployd Job Search

iPhone

■ At the App Store, six people rated this app, giving it a 2-star average.

Real-Time Jobs

iPhone

■ With over 450 ratings at the App Store, the Real-Time Jobs app averaged 2 stars and got reviews that are all over the map.

Search Jobs Beyond

BlackBerry

■ The Search Jobs Beyond app got 18 reviews at BlackBerry App World, with an average rating of 2 stars. As with the other apps, experiences tended to be either very good or very bad (seven reviewers gave no stars, while seven others awarded 5 stars). But in this case, several of those who hated the app seemed to live outside the U.S. coverage area.

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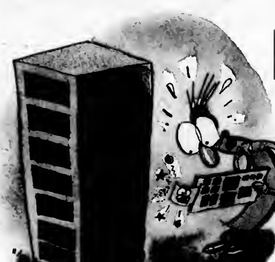

HAL MAYFORTH

Aha!

In the data center where he works, this pilot fish discovers that one server's RAID array is showing a failed drive. Fish pulls the drive, replaces it with a fresh one and waits for the array to start rebuilding the contents of the drive. But that drive shows as failed, too. Huh? Fish tries yet another drive. That one produces the same result. "I finally looked in the drive slot," fish says. "A Post-it note was jammed against the connector at the back of the slot. I was able to remove it without powering down the server and replaced the drive, and the array rebuilt itself, all without any downtime."

Details, Details

This executive has never set the forwarding on his email. "He usually makes his office manager do it for him," says the pilot fish responsible for giving him IT support. "But he landed at corporate headquarters for a couple of days, and informed me that he broke his personal BlackBerry and got a new one. He said he wasn't receiving any emails on the new BlackBerry and people sending emails got rejection emails in return. I explained that all he needed to do was set his email to forward messages to his new BlackBerry. We went through what options should be checked off and why. Finally, we got to the place where he had to put in the address that email would be forwarded to. 'What do I put in there?' he asked. I told him, 'Put in the new BlackBerry email address.' He looked up. 'Well, what *is* my new email address?' 'Did you not get told what your email address is?' I asked. He replied, 'Why would I want to know that?'"

Time Is Money, Right?

Pilot fish is working late to get ready to leave on vacation, but the database is responding slowly. "I pull up the top-sessions list and there's a session hitting the database from a workstation halfway around the world," he says. "I've never seen this one before, so I send out a note to the development group: *Does anyone know what this thing is? It's I/O intensive and has been running for the last 15 hours.* Then I finish up my work and go on vacation. When I get back, I see a number of responses to my query: Not mine. Not mine. It might have something to do with such-and-such a process. Nothing definitive. The next day I get a note from a tech somewhere in Europe. 'This is vital. It's checking for new orders.' So I monitor the process for a while and do some timing calculations. Then I send the tech in Europe this question: 'Do you think we could check for new orders a little less frequently than once every three seconds?'"

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OPINION

S.J. VAUGHAN-NICHOLS

Life on Jobs-less Earth

AS SOON AS STEVE JOBS ANNOUNCED that he was stepping down as Apple's CEO, a swarm of stories appeared singing his praises. Fair enough. Other stories pointed out that Jobs made mistakes. OK, I can see that, too. What I don't get is all the people who are saying that Jobs wasn't that important. That is wrong. If we could step into a parallel world without Jobs, I doubt you'd recognize it.

It's true that Jobs was never a great developer or engineer. He hired great developers and engineers. He also wasn't that original. But Jobs' gifts were fourfold: He could recognize great technology when he saw it; he had a great design aesthetic; once he had a vision, he stuck with it and made it work; and he could persuade others to back it.

Doesn't sound like much? It was everything. Let's visit Jobs-less Earth, shall we?

Our first stop on Jobs-less Earth is Apple. Oh, wait, what Apple?

First, we'll look in on Apple. Oh wait, what Apple? In this world, only tech geeks of a certain age (like me) even remember Apple and those other 1980s computer companies, such as Coleco, Sinclair and Kaypro. Some tech nostalgists recall the Apple IIe with the same kind of fondness that, in our world, is felt for the Commodore 64.

The Mac? Without Jobs to push it, there is no Mac. And no Lisa, the first business computer with a GUI and mouse. Well, you say, even Jobs-less Earth still has Xerox PARC, and therefore the GUI and mouse. Yes, but without Jobs, years go by before they go mainstream.

Which means that over at Microsoft, DOS and the command-line interface survive many years longer. In our world, Bill Gates and friends got to know the WIMP (windows, icon, mouse, pointer) interface because of the work they did in the early '80s for Mac applications. Without Jobs, I estimate we're *at least* a decade behind in desktop design.

As a result, PCs are business tools. Consumers interested in computing tend to buy hobbyist kits. There is no mass market for PCs. For most people, they just aren't that useful. Lately, some people who have grown accustomed to using PCs at work have coughed up a couple of thousand dollars so they can have one in their home offices. But nobody's grandmother uses them to post pictures of her grandchildren, and no teenagers spend hours on Facebook. Oh, yeah, there is no Facebook.

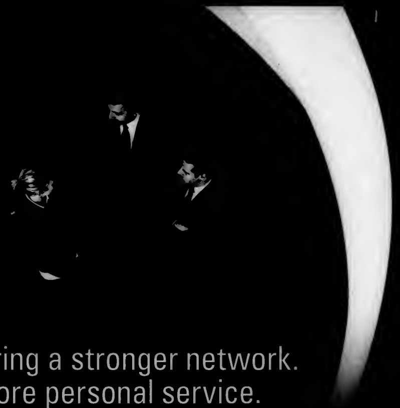
In other words, computing technology has not yet gone popular. But let's assume that somewhere down the road we do get widespread GUIs and PCs in nearly every home. That opens the door to things like MP3 players. But they are the sort that we had around the turn of the century. Junk. Without Jobs, there is no iPod, and the entire digital music revolution is delayed for years.

On Jobs-less Earth, you probably do have a smartphone. But it's unlikely to be exactly the smartphone you have here, where touch technology has permeated our world to a remarkable degree. On Jobs-less Earth, with no iPod, there's no iPod Touch and therefore no iPhone. Without Jobs, is there anyone else capable of the vision that became the iPhone — someone who's also capable of executing that vision? I don't think so.

In this alternative world, once home computing becomes popular, someone will develop the tablet. But hardly anyone will buy one. Without the iPad, there's no such thing as a popular tablet.

The picture I'm painting of Jobs-less Earth is extreme, of course. Others might have filled in for our Jobs in some areas. My point is that Jobs did indeed have a tremendous impact, far beyond the world of Apple fanboys. I, for one, would be less happy in a Jobs-less world, with its Windows 98-style desktops, "luggable" mobile devices and IT-centered computing world. And I'm already missing Steve Jobs in our technology world. ◆

Steven J. Vaughan-Nichols has been writing about technology and the business of technology since CP/M-80 was cutting-edge and 300bps was a fast Internet connection – and we liked it! He can be reached at sjvn@vna1.com.



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